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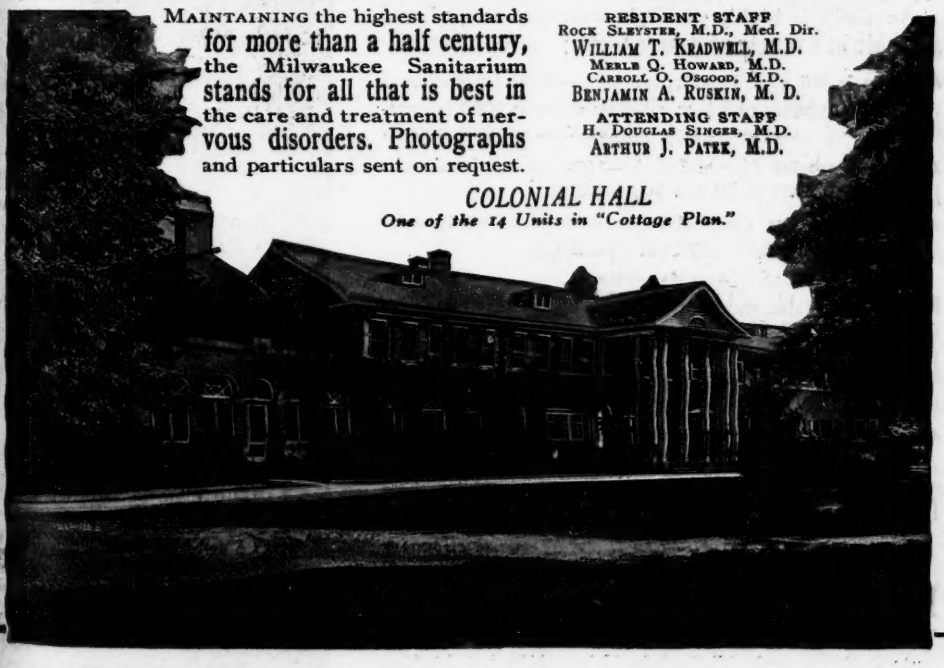

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Editorial

OLD PATENT MEDICINE CONCERNS NEVER HAD BETTER BALLYHOOERS THAN DO MODERN PHILANTHROPIC FOUNDATIONS

Radio audiences, both lay and professional, have been listening with interest and more or less concentration to debates on the air as to who should pay everybody's doctor's bills.

Fanciful phrases arrayed against forceful facts is the true digest of those discussions. Histrionic Bengal lights as flaunted by the lay arguments of a gentleman by the name of Foster, a professional economist in the employ of a large lay foundation, quite confused the odds-bodkins listener on the vast circuits, no matter how much ire they aroused in the well-cocked medical ear. Economist Foster seems to have swallowed, hook, line and sinker, the almost universally condemned report of "The Committee on the Costs of Medical Care." From this denounced majority report Economist Foster quoted and abridged and epitomized largely and loudly. On one occasion he said in part and backed up this saying by a signed article in *"The Rotarian,* November, 1935," that:

"The Committee on the Costs of Medical Care presents nothing more revolutionary than the proposal that such experiments in group practice and group payment as are already under way should be tried out wherever the people of a community wish to try them. Yet this mild proposal is condemned by the Editor of the *Journal of the American Medical Association* as 'Socialism and Communism—inciting to Revolution.' The American Medical Association moreover, at its annual convention last year in Cleveland, O., went so far as to pass a resolution declaring that 'however the cost of medical service may be distributed the immediate cost should be borne by the patient able to pay *at the time the service is rendered.*'"

Physicians who missed out on the fallacious

debate of the health insurance clan will find their hair raising in horror as they view in cold print other portions of the Foster argument and which read in part: (See "The Rotarian" for Nov., 1935) and with a passing broadside at the conclusions of the A. M. A.

"This absolutely shuts out all pre-payment plans. It condemns group payments on an insurance basis. If it means what it says, it condemns any doctor who accepts a salary for his services from a group of patients. Thus the American Medical Association reiterates its assertion that those who pay the bills for medical care have no right to say how the bills shall be paid," continues Economist Foster.

"For years, the American Medical Association has repeatedly assured us that it favors experiments toward more satisfactory methods of paying for medical care; but to date it has not advanced any far-reaching plans of its own, and when any group outside the Association, such as the Ross-Loos group in Los Angeles, starts an experiment, those in control of the profession respond by trying to excommunicate the cooperating doctors.

"But, we are told, group practice 'destroys the precious personal relation between the patient and his family physician.' I do not find this the case among the many patients with whom I have talked in Los Angeles group clinics. Each patient selects his own physician from a panel, and this physician has continuous charge of his case. The satisfaction of the patients is shown by the rapid increase in the membership.

"Why, in any event, should the fact that the physician is sure of his pay be a barrier between him and his patient? The bills are not among the 'precious personal relations' between the doctor and the patient. On the contrary, the bills are the chief cause of friction. Moreover, under prevailing individual practice, millions of men, women, and children have no relations, personal or otherwise, with a family physician, or with any other kind; and it is primarily for some of these uncared for millions that group plans are proposed.

"Any proposal whatever for collective attack on the problem is at once condemned as 'state medicine,' or as a step toward 'state medicine.' Inevitably, so it seems, collective action means that the expectant mother cannot be confined except by vote of the Board of Aldermen.

"But why these sudden fears of political control of medical practice? Those who view with alarm all new adventures in medical economics seem to overlook the fact that already we have collective control of the economic phases of much medical practice. That is to say, we now care at public expense for war veterans and for the army and navy, as well as for those who suffer from mental disorders, from tuberculosis, and from a great many other diseases.

"Also, collectively, we furnish free medical care for the indigent and do most of the work for the prevention of contagious diseases. Most of the hospital beds, too, are in public institutions. In fact, above 15 per cent. of the national bill for medical care is paid from public funds. To date this is our answer to the contention that medicine has a right to control its own affairs. To this extent we have renounced rugged individualism. To this extent we already have state medicine.

"If this is 'Socialism and Communism—inciting to revolution,' even the 100 per cent. patriots need not be alarmed. For it has gained no votes for either the Socialist or the Communist party.

"Whether or not we shall have state medicine is the national debate proposition selected this year for the high schools and discussed by more than 50,000 students. It is largely an academic question. In point of fact, the scope of state medicine is increasing, but not so rapidly as the scope of private medicine administered by groups and paid for on a monthly fee basis. It is the old individual fee-for-service kind of practice that is losing ground. Those of us who are promoting group practice and group payment plans are doing far more than the organized medical profession to curb the growth of state medicine.

"Yet, in opposition to all plans proposed by laymen, the organized profession asserts that medicine has a right to control its own affairs. This is a naive conception of its place in the social order. No profession has any rights which are not conferred upon it by society. The county medical association which solemnly warns us that no government organization has any right to assume the responsibility for the prevention of disease merely makes itself ridiculous.

As a matter of fact, the medical profession is the only one that persists in such an untenable position. Railroads, insurance companies, bankers, public utilities, stock exchanges, contractors, engineers, lawyers all know that they can expect to be left alone, only in so far as leaving them alone conduces to the public welfare.

"Even with the present national income, the people of the United States are able to pay for adequate medical care. To be sure, once we contrive to make the flow of money to consumers keep pace with the flow of consumers' goods to market, we shall more than double our national income. But the present income is enough to provide good medical care for everybody. Thirty-six dollars a year per person would be enough, if we abolished the reducible wastes of present un-business-like methods.

"Already we are spending about $30 a year per person. An increase of $6, if the funds were spent to advantage, would meet all needs. This means that we could give 120 million people the benefits of the astounding advances which have been made during the past generation in medical science, if we spent for medical care, all told, merely as much money as we spent, in the darkest days of this depression, for trivial things."

Among the sincere points of truthful information with which Dr. Morris Fishbein replied to Foster must be connoted this, "Even the most ardent advocates for socialized medicine for the United States, including Rexford Tugwell and William T. Foster (Economist Foster), frankly admit that no system developed in other lands would be suitable for application to the American people; yet every plan proposed for application in America imitates in its set up some of the worst features of the foreign plans.

"In the typical setup recommended, the hospitals are to be the center of medical care. These hospitals are to employ a certain number of specialists and a certain number of general practitioners to take care of all of the people in the vicinity. It is presumed that patients will have opportunity to choose a doctor from the staff of the hospital to which they are assigned, or to which they may wish to go for treatment.

"The individual will find himself taxed a certain sum per year for his medical care whether he is sick or not, and the doctor will be paid either by the State or by the hospital for the service which he renders. His advancement, then, will depend on his popularity among the patients, or on political prestige.

"Anyone who has studied the American political system will realize, however, the great danger involved in making political prestige the term for preferment in giving medical service.

"In that play called *Men in White,* Levine, a city doctor who has failed, says, 'A doctor shouldn't have to worry about money. That's one disease he's not trained to fight. It either corrupts him—or it destroys him.' And then he reflects: 'Well, maybe some day the State will take over medicine.' To this another doctor replies, 'Before we let the State control medicine we'd have to put every politician on the operating table and cut out his acquisitive instincts.'

"Today medicine throughout the United States is experimenting with new plans of organization to provide more and better medical care to more people at lower costs. Hundreds of plans have been developed whereby people voluntarily put aside a certain sum of money each month in order to pay the costs of hospital care should they need them. In New Orleans, for example, 30,000 people have voluntarily engaged in a hospital insurance plan which provides for free choice of doctor and hospital, and free determination by individuals as to whether they care to engage in the plan.

"Innumerable county medical societies throughout the United States have aided in the development of prepayment plans for both medical care and hospital care. These plans vary. For example, a type of medical care suitable to an industrial community, like that of Gary, Indiana, is hardly suitable for a completely rural area like the large plantations of the South or of the wheat fields of the West.

"Actually, the medical profession is approaching the demand for new organization of medical practice in the same way that a good doctor approaches his patient, first endeavoring to diagnose the condition and then, by the application of the available knowledge, to direct the treatment. It prefers, however, to use methods of treatment that have been tried on a small scale and found suitable, rather than to work out a new treatment for every case. It feels that experimentation under controlled conditions is the

right system for maladjustments of social organization just as it is for disease within the human body.

"Even with these changes, however, the average citizen who wants for the future the same high quality of medical service that he has had in the past, but more of it and at a lower cost, must realize that medicine today is not the same as the medicine of 1875. He must understand that the demands on the public purse of today for other features of living are far greater than they were in 1875, and must learn to arrange his budget in relationship to his certain needs.

"In the development of new plans, the individual must remember that any plan which will take from him his individuality, particularly in times of illness, or any plan which will remove from him the personal consideration which is fundamental to the best type of medical care is a dangerous plan, regardless of the cost he may pay for the service.

"Until that time comes when human beings have been standardized, these mass plans for medical care are sure to lower the quality of medical service, and medical care can be judged only on the basis of the quality of service rendered."

In the meantime Economist Foster continues in his task of trying "to free the science of medicine from the shackles of the business of medicine," duly financed and inspired by that big business that has placed economic shackles upon scientific medicine. The old patent medicine concerns never had better ballyhooers than do modern philanthropic foundations.

HOSPITALS PROTEST AGAINST SABOTAGE OF SELF RELIANCE LONG ENDOWED BY MEDICINE

Hospitals have dropped at last into the class of injured and doubly taxed professionals in which for so long the laurel and the bay have been worn by the medical profession.

The yelp of pain as a result of the drop is heard loud and lusty in the columns of Dr. Otho F. Ball's erudite and sincere magazine, *"Modern Hospital."* What THE ILLINOIS MEDICAL JOURNAL has been crusading against for a quarter of a century is now being done for the hospitals through Dr. Ball and his magazine, in which appears a forceful article attributed to Dr. Glenn Frank. "The Sabotage of Self Reliance" is the able phrase employed succinctly to describe the workings of all the socialistic schemes that debauch the self-respect of United States citizens, and destroy both American ideals and the working democracy.

"Government interference," reiterates Dr. Ball and his cohorts, "if continued much longer will wipe out a large number of so-called voluntary or independent charitable hospitals in this country. . . . Socialized medicine, state hospitalization while the net result of this transfer will not be the end of the matter. When hospitals and medicine are thus socialized in due course will follow socialization of all other independent social activities, with investment of billions of dollars of capital representing the personal sense of social responsibility upon the part of millions of donors. Voluntary research foundations, education and welfare relief and charity will be included, and, eventually even religious institutions will fall victims, when operated under similar conditions. . . . Growing political patronage will open the way to industrial socialism or some other form of fascism in America."

Further Dr. Ball points out that the article relative to this "Sabotage of Self Reliance" can be said to emphasize the fact that governmental hospitals perform necessary parallel functions with private hospitals when not used for more than intended purposes under American ideals. But warning must be uttered against any invasion of private interests beyond the limits of those ideals, although precedents have already been established, in government hospitals where patients are taken for pay, and government hospitals under political pressure are further competing with private hospitals by taking as free patients those able to pay for such services.

Functions of government hospitals include those of the indigent sick for whom state care must be given and war veterans to whom the government is under special obligation in addition to a few specialized groups, such as mental, tuberculous, and similar long time cases.

Further pressure on the private hospital, so Dr. Ball points out, results from demands that private hospitals increase their charity work while in some localities these same hospitals are actually being taxed for the support of an enlarged governmental hospitalization program.

Dr. Ball cited recent statements of Charles H. Schweppe, president of St. Luke's hospital and head of the Chicago Hospital Council, which point to taxation trends not only directly affecting voluntary support for private hospitals but also tending to snuff out all remaining sparks of social consciousness and responsibility. Such findings are amplified in the "sabotage" article which, Dr. Ball stated, was written by President Glenn Frank of the University of Wisconsin, a tax supported university. This article attacks the "sweeping transformation of functions from voluntary enterprise to state action."

"The drastic drop in the support of voluntary social institutions during the last six years," this article declares, "has been due to something more than the impact of the depression upon the incomes of men and women. It is, in part at least, the inevitable result of the wholesale substitution of public action for private action which has been a distinguishing mark of national policy since the Roosevelt forces came into power."

"The Sabotage of Self Reliance" in challenging the nature of this whole change, asserts that as victims of economic "shell shock" we were "credulous patients for any doctor with a plausible remedy."

"Put as briefly as I can state it," the article continues, "the balance between social power and state power is being profoundly altered. Public initiative is being substituted for private initiative in larger and larger areas of national enterprise. It means, in short, this: We are fostering a national psychology that looks to government as the George whom we shall let do it. It means an inevitable relaxation of any sense of social responsibility on the part of individuals and groups for other than the payment of increasingly drastic taxes. It means a nation of men and women who will, in the future, express their social consciousness by proxy through federal agents."

Dr. Frank disclaims spokesmanship for any vested interest, but points out that he speaks as a "servant of government, not unconcerned with endowment campaigns and in no wise dependent upon variation in the flow of private benefaction. Any permanent slump in support or any permanent shrinkage of the role in American life of private or voluntary institutions would be a national calamity. The healthiest condition of both public and private institutions is to be found as a result of parallel competition.

"The case for the voluntary social institution," Dr. Frank declares, "may never get to court unless, as a people, we come to grips with an age old delusion, now suddenly revived in the name of liberalism, that there is some short cut to social greatness through overlordship of the state."

DISPENSARY SERVICE A DETERRENT TO THE FUNCTIONING OF SCIENTIFIC MEDICINE

Dispensaries, labelled as a detriment to public health efficiency and the superlative functioning of scientific medicine, are coming under fire in numerous sections of the country.

Not the least of this is that section so sadly bitten by medico-socialistic-communism, the great and grand commonwealth of Michigan. There the Wayne County Medical Society has been up and doing to put salt on the tail of existing abuses in the dispensaries of Detroit, Mich., with such drastically shameful revelations that the survey committee of the society recommends to the public at large, such a change in system, method and functions as will save both taxpayers and voluntary contributors a sum estimated to total anywhere from fifty thousand dollars a year to possibly twice that amount.

Some fifteen queries probing dispensary service in Detroit are embodied in a questionnaire sent out in May, 1934, to members of the Wayne County Medical Society.

These arose from the feeling in that body that the treatment of indigent, ambulant patients and necessary medical treatment to the world's unfortunate, that are the inherent function of any dispensary or clinic were being sadly abused. The doctors were right. That is proven by tabulated results from this questionnaire. Dispensaries supported for aid of the worthy poor are the mecca of that variety of thieving citizenry known as "Chiselers." What is true in Detroit is true the United States over. A new generation of "charity parasites" is crowding out the worthy and meritorious poor. For this the paternalistic, over-trained welfare worker is largely responsible, next to the grafting politician.

"The best in the world is free, come and get it," is the slogan under which these half-baked, politically controlled jobbists labor. The welfare worker forgets completely the bill-payer. This is natural enough. Welfare workers pay for little. A welfare worker works for welfare; his or her own first, and the next lower ranking parasite next. Right in this group lies the nucleus of propaganda dissemination that dispensary service is free to anybody, to the rich as well as to the poverty stricken and to the destitute. Dispensaries as a rule are supported either by the taxpayers, by community levy or by private contribution. It is a shame that that which is assembled for the ailing mice of the world, should be devoured by the greedy rats.

The Wayne County Medical Society, sitting in council over the returns of its questionnaire, concluded that

1. Freehanded practice of poorly supervised and proteanly distributing dispensaries so destroys the responsibility of a large percentage of the population, that from the present situation of merely *accepting* free medical care that they will soon be on their way *demanding* such paternalism with

2. Food, clothing, shelter, and general maintenance next on their "Gimme" list as the entering wedge for complete sovietization of the United States and destruction of contemporary civilization, which, while faulty as it is, stands yet as the most perfect and democratic standard of existence as yet achieved by humanity.

Another interesting item in the analysis of this questionnaire results in the disclosure that clinic and dispensary work is a dead loss for the contributing physicians in private practice.

Social service investigation is an instrument which the practitioner of medicine has always used in his own office with private patients. The family doctor of old used social service, although his intimate knowledge of the status and background of every one of his townsmen permitted him to keep such confidential information in his mind and heart and not as a permanent file available for court records and public dissemination. In the dispensaries of the modern city, the physician's medical skill is the most valuable asset to the patient. In order to serve as many as possible in the time he can donate, the doctor loans his prerogative of social service investigation to paid assistants. Some social service departments have become so complicated and bureaucratic that they have departed from their original function of assisting the physician and through him the patient. Doctors serve in dispensaries "blindly," not knowing the important details of the patient's background and having nothing to say about his right to free service.

Lack of mutual sympathetic understanding between the dispensary physicians and the Boards of Managers of most of the agencies results from the absence of official contact. Generally speaking, the physicians feel that while they are being "used" by the dispensary executives they are being *refused* any voice in the manner in which they are to give their time and effort. As one Detroit physician put it: "If I want to give away my money, I should be the person who will dictate where that money is going; but if I want to give away my time (which is money) in a dispensary, I find myself the only person who has absolutely nothing to say about it. That's why I'm now dispensing my charity service in my office, and not in a so-called free clinic."

The Wayne County Medical Society's Survey Committee's report contends that the growing evils of dispensary practice with the attendant lessening of private work has a tendency to decrease the interest of high class young men to enter the practice of medicine. This threatens the quality of medical service in the near future.

The Committee stresses that the survey is based on the experience of Detroit physicians who have had years of daily contact with dispensaries. In offering recommendations for improvements, the medical profession emphasizes the *type of service* as the ideal to be reached, and not an accumulation of mere *hours of service* which pleases no one except the statisticians.

Changes recommended in the answers to the 15-point questionnaire may be summed up in the following seven items:

1. No physician giving service in a dispensary should be paid. A medical director to manage the dispensary may be compensated, but no other doctor of medicine. A dispensary is a charity and must be supported by charitable donations or by taxpayers; the physician gives his time and the philanthropist donates his money

to pay the salaries of the lay workers and the maintenance charges.

2. A law to regulate dispensaries, similar to the excellent New York law, should be enacted in Michigan. This would limit dispensary service to charity cases, and would set up legal penalties for chisellers.

3. Duplication and competition among dispensaries should be eliminated and costs to the taxpayers and voluntary contributors to the Community Fund, etc., should be cut down by the establishment of a Central Registration Bureau (similar in operation to the central bureau registering all welfare families as used by the Detroit Department of Public Welfare).

5. Thorough investigation of each applicant should be made by the admission clerk, who should be a tactful, well-trained individual, imbued with the enormity of the increasing cost of dispensary maintenance to taxpayers and philanthropists. The physician to whom the patient is assigned should receive the clinical and economic history of the case and from a study of same should decide whether or not free service should be given to the patient. All his rejections should go back to the dispensary subcommittee. The social service department should be conducted for the purpose of making certain that the physician's instructions are carried out, and for no other purpose. It should be under the direction of the dispensary subcommittee. So should the Medical Director.

6. To encourage more personal and sympathetic care, the many physicians who are willing to render free service to charity patients in their own offices should be allowed to use the dispensaries as referral stations for consultative purposes as well as for diagnostic aids (such as for radium treatments when the doctor does not own this expensive agent), with the patient always being sent back to the physician. This procedure would save thousands of dollars every year to those supporting dispensaries.

7. Admission clerks should refer all employed persons or people with means either to their family physicians or to the Medical Service Bureau of the W. C. M. S. which will work out a credit plan with each patient whereby he will secure necessary personalized, friendly service by a private doctor, at a price he can meet, with easy periodic payments. "No one in Wayne County need go without adequate medical service," says the Committee's report, "if he will seek the aid of his family physician, or the Medical Service Bureau of the Wayne County Medical Society."

SUMMARY

Greater use of the Medical Service Bureau, creation of a central registration bureau, passage of a law regulating clinics, and utilization of the dispensary physician's knowledge regarding each patient's economic status, would save thousands of dollars each year, result in better distribution of service, and deal an effective blow to socialistic activities, states the Survey Committee. Pending these necessary changes, no new case should be accepted by a dispensary without a written request from a physician that free service be given that patient.

Clinic doctors donate. And that is that story! As a part of the ethical tradition of scientific medicine, at least half a million dollars per year in terms of scientific services rendered and medical skill is the voluntary contribution of Detroit doctors to clinics, medical centers and allied happy hunting fields for the resolute grafter and chiseler.

One of the faults and a glaring one in Detroit clinics is the lack of a clearing house of registration since each clinic is an independent unit. Duplication and re-duplication of service to a patient is a common cost.

This is another evil that has arisen with the decline of the old fashioned family doctor, to whom social service investigation, though he never called it that, for old Doc Sawbones was short on high-falutin' titles, was a private office instrument used with every patient.

1936 ANNUAL MEETING

The Eighty-Sixth Annual Meeting of the Illinois State Medical Society will be held in Springfield on May 19, 20, 21, 1936. The Sangamon County Medical Society has entertained the State Society at the annual meeting on so many occasions in recent years, the members are always assured that they will be welcome and be well entertained.

The Committee on Arrangements has been carefully selected and will work diligently until the meeting is over to do their part in making

the 1936 Annual Meeting a highly successful one.

The officers of each scientific section are working on their section programs to make them attractive and they will have an arrangement in their scientific programs this year which is different from that of previous years.

All meetings will be held in the Knights of Columbus Building and all exhibits, both technical and scientific will be shown in this same building. The Abraham Lincoln Hotel has been selected as the official hotel for the meeting, and the annual "stag" entertainment and the President's Dinner will also be scheduled for this hotel. The Committee on Arrangements will aid all members desiring hotel accommodations in making suitable reservations.

The Committee on Arrangements and the subcommittees are as follows:

COMMITTEE ON ARRANGEMENTS AND ENTERTAINMENT

Richard F. Herndon, *General Chairman*
George W. Staben
Homer P. Macnamara
Samuel E. Munson
Don Deal
John R. Neal
Arthur E. Walters

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Kenneth H. Schnepp, *Vice-Chairman*
George B. Stericker
Chas. L. Patton
G. Koehler
J. F. Deal
O. E. Ehrhardt
Lawrence M. Hilt
Geo. W. Staben
W. C. Martini

COMMITTEE ON TRANSPORTATION

C. W. Milligan, *Chairman*
J. C. Walters, *Vice-Chairman*
Robert Flentje
Geo. H. Fleichlei
William J. Morginson

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David Barker
M. M. Bradley
J. A. Day
J. A. DeFreitas
Elmer Hagler
T. G. Hill
T. F. Hilt
J. R. Irwin
J. C. McMillan
Chas. McLaughlin
E. A. Morris
A. J. Newman
L. E. Orr
Thomas Priest
H. B. Raman
M. E. Rolens
H. M. Sears
J. M. Shearl
J. M. Salzman
Domenico Sterbini
F. B. Jones
K. J. Malmberg
O. F. Maxon
A. L. Stuttle
W. W. VanWormer
W. A. Young

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Thos. D. Masters, *Vice-Chairman*
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E. F. Pearson
G. J. Mautz
E. S. Spindel

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Harry Otten
G. C. Hunt
Albert R. Trapp

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I. W. Metz
Frank N. Davis
H. H. Southwick
Emmet F. Pearson
Geo. H. Vernon
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Robert H. Beverly

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G. J. Mautz
David McCarthy

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Robt. Flentje, *Vice-Chairman*
P. G. Kokenes
H. L. Metcalf
O. H. Diechman
Harry Amant

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Walter C. Martini
Martin B. Jelliffe
J. G. Meyer
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C. B. Stuart

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James E. Graham, *Vice-Chairman*
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D. M. Sirca

COMMITTEE ON EYE, EAR, NOSE AND THROAT

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Stuart Broadwell
E. T. Blair
J. A. Kerst

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G. W. Staben, *Chairman*
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Henry Aschauer
David C. Ditmore
J. J. Donovan

COMMITTEE ON OBSTETRICS AND GYNECOLOGY

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N. B. Jelliffe

COMMITTEE ON PEDIATRICS

O. E. Ehrhardt, *Chairman*
H. C. Blankmeyer, *Vice-Chairman*
Franklin Maurer
Fred B. Roache

COMMITTEE ON PRESIDENT'S DINNER

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Samuel E. Munson, *Vice-Chairman*
Homer P. Macnamara

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H. H. Tuttle, *Vice-Chairman*
E. L. Barnard
J. C. Jackman
S. R. Magill
Chas. F. Harmon

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N. Rosen
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LADIES ENTERTAINMENT COMMITTEE

Homer P. Macnamara, *Chairman*
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Clara F. Holmberg
Elizabeth Ball
H. T. Morrison
Geo. Thos. Palmer

WOMEN'S AUXILIARY COMMITTEE

Mrs. A. G. Aschauer, *Chairman*

COMMITTEE ON FINANCE

Homer P. Macnamara, *Chairman*
John R. Neal, *Vice-Chairman*
Arthur E. Walters
L. D. Wright

WOMAN'S AUXILIARY COMMITTEE

Mrs. H. H. Southwick, *Chairman*
Mrs. Albert Aschauer, *Vice-Chairman*
Mrs. H. B. Henkel
Mrs. John R. Neal
Mrs. John J. McShane
Mrs. Geo. Staben
Mrs. Geo. T. Palmer

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Illinois State Medical Society
E. S. Hamilton, M. D., Chairman
Kankakee, Illinois

C. G. Farnum, M. D.
R. K. Packard, M. D.
J. S. Templeton, M. D.
C. E. Wilkinson, M. D.

H. M. Camp, M. D.
I. H. Neece, M. D.
C. B. Reed, M. D.
C. S. Skaggs, M. D.

Address all letters and communications to the Chairman.

Interest in the debates on the question "Resolved that the several states should enact legislation providing for a system of complete medical service available to all citizens at public expense," has been great. Universities, colleges and high schools have all accepted the question and are preparing, if they have not already completed the same, to argue both sides of the subject. Having listened to three different debates on the subject, two by college students and one by physicians and laymen, the writer is convinced that little real data is available to the average student, who is preparing for this debate. Many of the arguments presented are either weak or poorly prepared and in most cases one must conclude that the reason is lack of adequate information. The American Medical Association, as well as the different State Medical Societies, have prepared and assembled data on this subject and the same is ready for distribution. This distribution is up to the individual physician, who as soon as he hears that the topic is to be discussed in his local college or high school should immediately contact the instructor in charge of the debate as well as the debaters and offer to procure the necessary data, whereby all phases and sides of the subject can be studied. Failure to do this is an evidence of lack of interest in the future of medicine. Surely, organized medicine has nothing to fear by a fair, impartial and complete presentation of all of the arguments for and against State Medicine. In fact, it is an opportunity rarely presented to organized medicine to present to such a large group the facts about the need for a change in the method of practicing medicine, the methods in use in European countries, and the results as shown by the mortality and morbidity figures as well as the expense connected therewith, without satisfying either the recipients or the medical profession.

At the last meeting of the Council of the Illinois State Medical Society held at Springfield, early in January, it was decided to simplify the dissemination of this information by the printing of a pamphlet on the subject. This has been done by several other State Medical Societies, and the Council hopes to include many of their best articles, augmented by others from the pen of men from Illinois. This work is now being done by the Committee on Education and we hope that it will be completed promptly so that the pamphlet will be available for distribution in time for use by those preparing to present the debate this Spring. Notice will be given in the ILLINOIS MEDICAL JOURNAL, either in this or some other column as soon as the same are available. Every practitioner must assume the responsibility in his local community of seeing that the information is available to the proper people at the proper time. This cannot be done by the officers of the Illinois State Medical Societies or the Council or any of its committees. The field is too large for any small group, regardless of how able and willing they are, to do all of the work, and as a result they must be heped by the local men. The Secretary of the Illinois State Medical Society, Dr. Harold Camp, Monmouth, Ill., and the Secretary of the Educational Committee, Miss Jean McArthur, 185 North Wabash Avenue, Chicago, will be more than glad to assist, in any way possible, the local men in the distribution of this information.

Interest in the subject of Group Hospitalization continues. The experiment is being tried out in increasing numbers of places, but as yet the time elapsed has been too brief to arrive at definite conclusions. One hospital in Chicago has started the plan to include only the members of the staff and the employes of the hospital. In a recent talk with a member of the staff, the writer received the impression that the plan was being accepted willingly and gladly by those eligible to it. New York, where the experiment is being carried on in a large way,

should have some report available in the near future. Certainly the plan does give to the insured some feeling of security as to ability to receive hospital treatment in the event of illness, to those who have entered the plan, and that seems very important. If the fear of extension to include medical care and gradual extension onward from that point could be eliminated, we feel sure that the plan would be much more popular with the medical profession. Until some of these uncertainties are cleared up, each and every thinking medical man should continue to watch the results of the plan where it is now in use, meanwhile talking with the laity to see what they are thinking of the plan and determining how great is their interest therein. If the plan is a success and not accompanied by danger to the future of medicine, surely the medical profession should be the first to endorse the same.

As announced in the last issue of the ILLINOIS MEDICAL JOURNAL, the annual meeting of the Northwest Regional Conference will be held in the Red Lacquer Room of the Palmer House in Chicago on Sunday, February 16. This is the first time that the meeting of this, the best, meeting on the subject of Medical Economics, has been held outside of Minnesota. At the last annual meeting it was decided, in view of the great interest in the subject and the increasingly large attendance from the Midwest as well as the Northwest, to hold the years meeting in Chicago, so that the men from this part of the country could attend. At the last meeting of the Council, an invitation was presented for all the officers of the Illinois State Medical Society and the officers of the Component County Societies to attend. This offer was accepted and the President and Secretary of all the County Societies of Illinois have received an invitation. We hope that there will be a large attendance. Any and all members of organized medicine are welcome, regardless of whether or not they received a personal invitation. It was impossible to send a personal invitation to all members of the Society. There will be plenty of room and we feel that a man will be well repaid for the time spent attending the meeting. The program is of the nature of a symposium on four of the principal topics of economics interest, each presented by a man, who is an authority on the subject. Each paper limited to twenty minutes, will be followed by discussion for ten minutes, by two previously selected men, after which there will be general discussion. A complete program of the meeting will follow this article and it is to be hoped that it will prove sufficiently interesting to bring out a large crowd. Requests for programs have come from many distant states, including South Carolina, from where we are assured one visitor.

The column this month is without the second article, which is usually presented. This is due to circumstances over which we have no control and we hope to be back on schedule next month.

E. S. HAMILTON,
Chairman, Committee on Medical Economics.

NORTHWEST REGIONAL CONFERENCE

Red Lacquer Room, Palmer House, Chicago

Sunday, February 16, 1936.

8:30 A. M.—Breakfast. (Red Lacquer Room.)

9:30 A. M.—Registration.

10.00 A. M.—Morning Session.

1. "The Social Security Act and Its Relation to the Medical Profession."

T. V. McDavitt, American Medical Association, Chicago.

Discussion opened by A. D. McCannel, M. D., Minot, North Dakota, and Chas. B. Reed, M. D., Chicago.

2. "Reciprocal Relations Between State Medical Societies."

Harold M. Camp, M. D., Monmouth, Illinois.

Discussion opened by A. S. Rider, M. D., Flandreau, South Dakota, and F. S. Crockett, M. D., Lafayette, Ind.

12:30 P. M.—Luncheon (with the compliments of the Illinois State Medical Society).
President's Address.
Oliver J. Fay, M. D., Des Moines, Iowa.
Election of Officers for 1937.
Selection of meeting place for next annual meeting.
Introduction of guests.

2:00 P. M.—Afternoon Session.

1. "Standardization of the Activities of the Committees on Medical Economics of the Mid-West and North-West."

F. L. Loveland, M. D., Topeka, Kansas.

Discussion opened by E. A. Meyerding, M. D., St. Paul, Minnesota, and W. H. Marshall, M. D., Flint, Michigan.

2. "Interprofessional Relations in the County."

Fred Moore, M. D., Des Moines, Iowa.

Discussion opened by L. M. Larson, M. D., Bismarck, North Dakota, and J. H. Hayes, M. D., Minneapolis, Minnesota.

Papers will be limited to twenty minutes each, and discussions to ten minutes; at the completion of same, papers will be open for general discussion.

Kindly address any inquiry to the Secretary, E. S. Hamilton, M. D., Kankakee, Illinois.

THE LAST WORD IN A VITAMIN CHART

Dr. Robert Jordan Fraser's (179 W. Washington St., Chicago) Vitamin Chart fills ably an urgent need for every practitioner of medicine who has found it difficult to keep in step with the tremendous strides in the study of vitaminology. This chart is at once an instructor and a competent "ready reference." In size it is convenient as in content it is competent, measuring 30 to 38 inches, while its price of $2.00 is remarkably low. Almost at a glance the possessor of this chart can survey the abridgement of the findings of some 350 international authorities, experimenters, laboratory workers and scientific commentators and writers. There is a bibliography with approximately 1,350 references. Source material was furnished by hundreds of legitimate ethical scientific books dealing with vitamins and various issues from all over the world of some 95 journals dealing officially with medicine, pathology, biochemistry, or nutrition. Arrangement of the chart is original. Classification has been made to effect rapid and easy cross referencing. Material has been divided into four general sections, i. e.,

1. Normal influences of vitamins.
2. Vitamin deficiency symptoms and syndromes.
3. Foods and the various vitamins each contains with additional facts relative to such foods.
4. A general section on vitamins dealing with vitamin requirements, storage, solubilities, conservation, destructive factors and other analytical elements.

More specific subdivisions are classified as to vitamin influences upon the nervous, the vascular, the blood and the sexual systems, and the digestive and the respiratory tracts and the bones and teeth.

Hence any physician by a quick reference to this chart can secure almost at a glance the vitamin data and its connection with any of his current cases without tedious and exacting hours of laborious comparison and research. Technical, experimental and clinical data in enormous amount and extensive scope were thoroughly gleaned for this chart and its practical data. The chart is almost invaluable. In the near future vitaminology and vitamin therapy will be universally recognized as one of the foremost forms of constructive therapy, and will displace many types of therapeutics now in common usage.

The vitamins belong in a category of superpotent, highly complex, chemical substances, as do the hormones and the enzymes.

Quoting from the official Imperial organ of the medical societies of Great Britain, the astute *"Lancet"* for 1934, vol. 54, p. 347—"We are probably too prone to think of vitamin deficiencies in terms of definite deficiency diseases, as Scurvy, Beri Beri, Pellagra and Polynuritis, —as a matter of fact, the overwhelming majority of cases are of mild grade and do not reach the severe degree of deficiency necessary to produce these classical diseases; the individuals being affected, in most instances, only to the extent of some impairment of 'well being'—and poorly defined states of ill health. A majority of our common diseases and ailments, if not due directly to vitamin deficiencies, are superimposed on pathological changes which are the direct result of vitamin deficiencies."

This chart has received the approval and commendation from those leading vitamin authorities in this country, who have had the opportunity of inspecting it.

Harry Eugene Kelly—In Memoriam

WHEREAS, Mr. Harry Eugene Kelly has been taken by death, and

WHEREAS, for eighteen years, Mr. Kelly has been the valiant and dependable friend of the medical profession, not only in the competent construction of the Medical Practice Act in 1923 and in its successful defense through the years, but in every other emergency where legal experience and acumen were demanded, and

WHEREAS, the medical men of the entire State warmly appreciate his unstinted devotion and deeply deplore the untimely departure of this courteous friend, this honest counsellor and resourceful lawyer, and

Therefore, be it resolved, by the physicians of the State of Illinois, that they express through their official representatives their profound sense of personal loss and their heartfelt sympathy with the afflicted household, and

Be it further resolved, that copies of this resolution be spread upon the minutes of the

State and county Societies and sent to the bereaved family.

By the Committee:

John R. Neal
Charles B. Reed
Charles E. Humiston, Chairman.

EDUCATIONAL COMMITTEE

January Activities

The Educational Committee sent letters to the principals of 658 schools in Illinois asking if the debating societies were to take up the subject of socialized medicine; if so, offering to send them material. During the month of January the Committee furnished material to debating teams in the high schools of the following cities:

Augusta	Galva	Plymouth
Ashley	Galesburg	Pinckneyville
Athensville	Galena	Palmyra
Armstrong	Greenville	Paris
Bowen	Jacksonville	Princeton
Bunker Hill	Kewanee	Pittsfield
Belleville	Kankakee	Rossville
Bismarck	Leland	Riverside
Brookport	La Grange	Rochelle
Coal City	Long Point	Rutland
Chesterfield	Mt. Carmel	Rockford
Charleston	Morris	Robinson
Catlin	Monroe Center	St. Charles
Carlyle	Mt. Olive	Sesser
Chadwick	Moline	Shelbyville
Carthage	Mattoon	Scottsville
Chebanse	Melvin	Sheffield
Dupo	Morton	Stockton
Downers Grove	Medicine Lodge,	Thomson
Dwight	Kansas	Victoria
Danville	Nebo	Vandalia
Effingham	Newton	Westfield
Elgin	Naperville	Wheaton
Eldorado	New Athens	West Frankfort
Farina	Olney	Westville
Freeport	Park Ridge	Winchester
Franklin	Pontiac	Waterloo

Secretaries or presidents of county medical societies in which these cities are located were notified that the request had come for material and suggesting that someone communicate with the debate coach or the person in charge of the debate.

This service has proved very successful and appreciated as indicated by a letter received from one secretary—"I have your announcement of the impending debate on 'State Medicine' to be held in one of our high schools, and in accordance with your suggestion I telephoned to the debating coach this afternoon. He has taken sufficient interest in the matter to come to my office tomorrow for an interview on the contemplated debate, and I shall use whatever tact and influence I have to get the proper facts before him and the debating audience."

RADIO:

Twenty-four radio talks were given over four Chicago stations. The following Chicago physicians prepared and gave the programs:

Cassie B. Rose—"X-Ray and Health."
Arthur W. Stillians—"Uses of Silver."
Arthur A. Halevy—"Do You Have the Art of Living?"
Leon Unger—"When a Child Coughs and Wheezes."
Albert H. Andrews, Jr.—"The Common Cold."
Edmund Jacobson—"The Nervous Patient."
Robert M. Jones—"Why Starve a Fever."
William H. Rose—"Pneumonia."
Anthony Reymont—"Worry and Health."
H. R. Fishback—"The Hospital Laboratory."
James J. Callahan—"Winter Accidents."
S. I. Kaufmann—"Defective Vision."
Samuel Narrod—"Childhood Tuberculosis."
George S. Livingston—"The Hard of Hearing Child."
Guy Cushing—"Speaking of Your Operation."
S. S. Snider—"Contagious Diseases."
Alex E. Walker—"Your Digestive System."
Allan Harvey Ferguson—"Progress in Obstetrics."
William J. Pickett—"Goiter."
Frank G. Murphy—"Pose, Poise and Posture."
Edward W. Hollingsworth—"Common Symptoms of Heart Disease."
Walter R. Fischer—"Why the Doctor in Foot Troubles?"
Roger T. Farley—"Arthritis."
Joseph M. Blake—"Hernia."

SCIENTIFIC SERVICE

13 Scientific programs were arranged for the following county medical societies:

Scott County, Iowa
Will-Grundy
Iroquois
DeKalb
Whiteside
Carroll
Christian

SPEAKER'S BUREAU

50 Popular health programs were arranged for lay meetings. The reports on some of these talks are very interesting and indicate that doctors are able to present their material to the laity.

"Very worthwhile. Excellent delivery for laymen as he speaks in terms all can understand."

"Presented in an interesting and understandable manner. Much discussion aroused and audience was awakened to the need of more attention to this phase of health."

"Doctor H.'s talk was a success. Our members liked the psychological phase of it. He is a delightful and forceful speaker. Many thanks."

"We were all very much pleased with the manner in which she presented her subject and hope to have the opportunity to hear her again."

"The men kept the doctor talking for almost two hours and then insisted upon informal discussion with him for another half hour."

PRESS SERVICE

20 Health articles, regular service.
483 Health articles to downstate newspapers.
78 Health articles to Chicago and suburban papers.
62 Releases for LaSalle County Medical Society meeting.
51 Releases for Whiteside County Medical Society meeting.
49 Releases for Bureau County Medical Society meeting.
32 Releases for Perry County Medical Society meeting.
27 Releases for Jefferson-Hamilton County Medical meeting.
41 Releases to papers announcing meetings of Chicago Medical Society.
5 Releases about Calumet Branch meeting.
5 Releases about Englewood Branch meeting.
4 Releases about North Shore Branch meeting.

Press articles were approved on the following subjects:

Worry or Health	Dick Test
Sick Headache	Cereals
Fibbing	Teething—2 Articles
Diphtheria	Fourth of July Accidents
Hours of Rest	Dysentery
Bronchial Asthma	Teaching the Baby to Drink From a Glass

LIBRARIES

528 Health articles to libraries in Chicago and Downstate.

SPECIAL SERVICE TO COUNTY MEDICAL SOCIETIES

351 Card notices for LaSalle County.
250 Card notices for Whiteside County
164 Card notices for Bureau County.
139 Card notices for Perry County.
192 Card notices for Jefferson-Hamilton County.

MISCELLANEOUS

During the month of January, the Committee furnished material to the Arkansas State Medical Society. That Society requested the Committee to be put on the mailing list to receive the material sent to Illinois newspapers. Jean McArthur, Secretary.

ANNUAL MEETING OF THE AMERICAN COLLEGE OF SURGEONS

The American College of Surgeons will hold its Sectional Meeting for the States of Illinois, Virginia, Tennessee, Missouri, Indiana, Ohio, West Virginia and Kentucky, in Louisville, Kentucky, on March 19-20-21, next.

Clinics will be held at the local hospitals. Special programs by leading surgeons and hospital authorities will be held at the Brown Hotel, which will be headquarters. The banquet will be on Thursday evening and a public session will be held at the Municipal Auditorium on Friday evening.

The profession of Louisville and of Kentucky extends a cordial invitation to the physicians of Illinois to be present and to help make this session a success.

A. T. McCormack, M. D., *Secretary*,
532 Main St., Louisville, Ky.

MEETING OF AMERICAN CONGRESS OF PHYSICAL THERAPY

The American Congress of Physical Therapy wishes to announce its Mid-Western Sectional Meeting to be held at the Mayo Clinic, March 4, and 5, 1936.

March 4th will be devoted to clinical papers; the session will open in Plummer Hall at 9 A. M., Dr. Frank Krusen presiding. Dr. Charles W. Mayo will deliver the address of welcome. The following speakers will present interesting papers, as follows:

The Use of Physical Agents in the Treatment of Circulatory Diseases. N. W. Barker, M. D., Rochester, Minnesota.

Studies in Tissue Heating with Short Wave Diathermy. John S. Coulter, M.D., Chicago, Illinois, and Howard A. Carter, B. S. in M. E., Chicago, Illinois.

Temperature Changes Produced in Various Tissues of Animals by High Frequency Electrical Fields. Charles Sheard, Ph.D., Rochester, Minnesota.

The Scope of Physical Therapy in Dermatology. Cleveland White, M. D., Chicago, Illinois.

Fever Therapy. A. U. Desjardins, M. D., Rochester, Minnesota.

Newer Aspects of Ionization Therapy in Perennial Nasal Allergic Disorders. A. R. Hollender, M. D., Chicago, Illinois.

Physical Therapy in Relation to Orthopedics. M. S. Henderson, M. D., Rochester, Minnesota.

Influence of Short Wave Diathermy on the Blood. Disraeli Kobak, M. D., Chicago, Illinois.

Pathologic Aspects of Arthritis. Ralph K. Ghormley, M. D., Rochester, Minnesota.

Recent Progress in the Study and Treatment of Arthritis. P. S. Hench, M. D., and C. H. Slocumb, M. C., Rochester, Minnesota.

Physical Therapeutics Management of Arthritis. Frank H. Krusen, M. D., Rochester, Minnesota.

On Thursday, March 5, Clinics have been arranged as follows:

8 to 10 A. M. Clinic on Fever Therapy. St. Mary's Hospital, Fever Therapy Department. Walter C. Popp, M. D., Rochester, Minnesota.

10 to 11 A. M. Clinic on Relation of Posture to Low Back Pain (Corrective Procedures). Physical Therapy Section—Museum Bldg. E. W. Secord, M.D., Rochester, Minnesota.

11 to 12 A. M. Clinic on General Physical Therapy. Physical Therapy Section—Museum Bldg. Frank H. Krusen, M. D., Rochester, Minnesota.

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

The Board of Directors of the Woman's Auxiliary to the Illinois State Medical Society met in the Palmer House, Chicago, January 25, 1936.

Despite the extreme cold, twenty members were pres-

ent, giving interesting reports on the various phases of the Auxiliary's work.

The Public Relations report revealed many different avenues of approach in advancing health education. Many auxiliaries have contacted high schools in their respective communities, offering assistance in securing material for the use of students representing the negative side of the debate question, "Resolved, that the several states should enact legislation providing for a system of complete medical service available to all citizens at public expense."

It was a privilege and pleasure to have with us for part of the meeting Mrs. Rogers N. Herbert, Nashville, Tennessee, and Mrs. Robert Fitzgerald, Wauwatosa, Wisconsin, president and president-elect of the Woman's Auxiliary to the American Medical Association. Mrs. Herbert spoke to the group during the afternoon session on "The Type of Leadership Needed for Our Auxiliaries."

Mrs. W. D. Chapman, President.

A WARNING

The Tilden Company just issued a Warning in the Drug Trade News which circulates to Manufacturers, Wholesalers and Retailers that any infringement of their Trade-Mark *Danish Ointment* will be prosecuted.

The Tilden Company has used the name since 1924 and put up the formula approved by authorities. It is intended that physicians shall get true *Danish Ointment* when they write prescriptions for it since this is a most thoroughly effective and harmless ointment in the treatment of Scabies and Itch based on the original formula.

Any interested parties are urged to report to The Tilden Company, New Lebanon, N. Y., or St. Louis, Mo., any infringement by others of the Trade-Mark *Danish Ointment* and such information will be acknowledged suitably.

Miscellany

PATHOLOGY AND PRACTICE

George Blumer, New Haven, Conn. (*Journal A. M. A.*, Oct. 26, 1935), discusses the importance to the clinician of a sound training in pathology, a doctrine which, in view of the antiquity of recorded medicine, is not such a very old one. He believes that the fields of pathology whose cultivation is most essential to the development of the clinician are morbid anatomy and histology. A study of these subjects makes for precision in diagnosis. Pathology, like diagnosis, is based on observation and induction, and it is clear that for this reason it is a preliminary training in method. It gives the student a much wider point of view of disease than is usually obtained in practice. Pathology gives an insight into disease as a whole and a clinician with a good pathologic training tends, as a result, to visualize what is going on in the entire body. Such visualization, based as it is on accurately observed facts, protects the clinician from the very human tendency to theorize and speculate on insufficient data, which has been such a prominent feature of medicine at certain periods, notably the eighteenth century. The value of morbid anatomy and histology as methods of checking the accuracy of diagnosis and showing the clinician his mistakes need be mentioned only in order to point out the necessity of encouraging their use to the fullest extent.

HEMOCHROMATOSIS

John P. Creed, Haverhill, Mass. (*Journal A. M. A.*, Oct. 12, 1935), describes a case of early hemochromatosis and that has some unusual features. First of all, the patient was acutely ill on admission, sufficiently so to have a diagnosis of intestinal obstruction made. Then the cirrhosis was in an early stage before the development of ascites, there was no evidence of diabetes, and, lastly, there was no marked pigmentation of the skin, although there were some pigmented areas over the backs of the hands and over the tibias. These areas and the skin in general were not striking enough to be considered unusual in a man of his age (65). The patient has been followed for almost four months since his discharge from the hospital. His digestion has been good and there is no evidence as yet of increased pigmentation of the skin, glycosuria or fluid in the peritoneal cavity. His condition will be followed further. The existing literature on this subject has been reviewed and the essential points have been included and summarized as accurately as possible.

SHOULD HETEROPHILE ANTIBODY BE USED IN TREATMENT OF PNEUMOCOCCIC PNEUMONIA?

In order to shed some light directly on the relationship of heterophile antibody to the course of lobar pneumonia in man, Maxwell Finland, Boston; James M. Ruegsegger, Durham, N. C., and Lloyd D. Felton, Baltimore (*Journal A. M. A.*, Oct. 12, 1935), studied the content of sheep cell hemolysin in the serums of 120 patients with pneumococcic pneumonia, including twenty-four who were treated with concentrated antibody from antipneumococcus horse serum. The serums of subjects immunized with potent pneumococcus antigenic fractions and of normal controls were tested for comparison. A total of 671 serums were examined. On the basis of their observations the authors conclude that heterophile antibody has no relationship to the course or outcome in human cases of pneumococcic pneumonia. Their data failed to show that pneumococci, when active in causing pneumonia in man, exhibit the characteristics of heterophile antigen.

ANALYSIS OF APPARENT INCREASE IN HEART DISEASES

Alfred E. Cohn, New York. (*Journal A. M. A., Nov.* 2, 1935), demonstrates, by a set of curves, the net increase in circulatory diseases after the age of 60. The figures given describe the condition in the U. S. registration area of 1900. They may be representative of the country as a whole, but, seeing how closely diseases of all sorts are dependent on the environment, the climate in the West and South may actually require

a different description of the course of cardiac disease for these states. Beginning with the age of 40 there has been a rise in the death rate from chronic cardiac diseases, decade by decade, from 1900 to 1930. From his study the author infers that there has been a rise, but only a slight one, in the death rate from circulatory diseases. The rise is due apparently to savings from deaths resulting from infectious diseases in the very decades in which the slight rise in the circulatory disease has occurred.

THE HEART IN HYPERTENSION

George Fahr, Minneapolis (*Journal A. M. A.*, Nov. 2, 1935), points out that 55 per cent of the appalling death rate consequent to essential hypertension is due to heart failure. Moreover, heart failure of some degree is nearly always present in cases of essential hypertension in which death occurs in uremia or from apoplexy or cerebral softening. The heart in hypertension shows left ventricular hypertrophy and dilatation with varying grades of replacement scarring in the muscle. There is some coronary arteriosclerosis present in 90 per cent of the cases. The coronary narrowing is responsible for the scars found in the heart muscle. A very high percentage of patients with angina pectoris and coronary arteriosclerosis have high blood pressure complicating the cardiac picture. Hypertension and coronary arteriosclerosis are so intimately and frequently associated that they should be considered together and the term "hypertensive heart disease" or "hypertension heart" should connote coronary involvement. What has been termed "chronic myocarditis" is usually the result of high blood pressure and coronary artery disease and not the result of infection. Heart failure in the clinical sense does not develop in hypertension until many years (from ten to twelve) have passed unless the coronary disease accompanying the high blood pressure becomes very severe or unless some other cardiac complication is present. Many patients with hypertension live fifteen years or more and finally die of one of the other consequences of hypertension, though some degree of heart failure may have been present previously or at the time of death.

THE PHYSICAL CHARACTERISTICS OF DIATHERMY AND SHORT WAVE DIATHERMY MACHINES

In their discussion of the two types of diathermy machines that are used at the present time to produce high frequency electric current which will pass through the tissues producing heat but no neuromuscular stimulation, Allan Hemingway and K. W. Stenstrom, Minneapolis (*Journal A. M. A.*, Nov. 2, 1935), refer to them as the spark gap diathermy machine and the vacuum tube diathermy machine. They assert that the newer method of heat therapy, namely, the short wave diathermy, is at present in an experimental stage. Much valuable research has been done to clarify the problems involved; at the same time there are in the literature some very confusing and misleading statements in regard to the merits of this form of therapy. For a good critical discussion they would recommend the recent article by Mortimer and Osborne. In particular, they would recommend that, owing to the lack of knowledge on many phases of this work and the indications of dangerous possibilities, the newer machines be used with the utmost caution. On the other hand, conventional diathermy is an old-established form of therapy about which much is known that has proved to be of definite clinical value.

CLINICAL EXPERIENCE WITH PROTAMINE INSULINATE

Howard F. Root, Priscilla White, Alexander Marble and Elmer H. Stotz, Boston (*Journal A. M. A.*, Jan. 18, 1936), state that preliminary observations in fifteen cases have in general confirmed the observations of Hagedorn and his associates regarding the protamine insulinate that has been developed in their laboratories. Presumably by slow breakdown of the compound in the subcutaneous tissues, a blood sugar lowering action is secured which is evener and more prolonged than that which follows regular insulin. Because of this, wide fluctuations in blood sugar level are less apt to occur and hypoglycemic reactions can be largely avoided. The new preparations is still in the experimental stage. Further work both in insulin laboratories and in diabetic clinics will be necessary to determine when, how, and in which patients protamine insulinate or some related compound can be best used. With the prospect bright of maintaining the level of the blood sugar within normal limits throughout the twenty-four hours, it would appear as if a new revolution in the treatment of diabetes must follow and the possibility created for the diabetic patient to resemble more closely a normal individual.

POLIOMYELITIS FOLLOWING VACCINATION AGAINST THIS DISEASE

According to J. P. Leake, Washington, D. C. (*Journal A. M. A.*, Dec. 28, 1935), through those responsible for the production of poliomyelitis vaccines, through several health officers and through others, word has come to the United States Public Health Service of the development, at suggestive intervals following subcutaneous and intracutaneous injections of treated poliomyelitis virus, of twelve cases of paralytic poliomyelitis with high fatality. The facts in each case are reported. Paralytic poliomyelitis was not epidemic in any of the localities at the time of the occurrence of these cases if these cases themselves are not included in the count. The author believes that to many physicians this series of cases, following by intervals of from six to fourteen days the injection of one or the other of two different vaccines, renders undesirable the further use of poliomyelitis virus for human vaccination at present. In every case in which the sequence is known, the level of the spinal cord first affected corresponded to the extremity in which the injection was made, paralysis beginning either in the same limb or in the contralateral limb. Although any one of these cases may have been entirely unconnected with the vaccine, the implication of the series as a whole is clear.

Original Articles

IN MEMORIAM

CHARLES B. REED, M. D.

CHICAGO

Friends and Fellows of the Society:—

We are gathered here today to honor the memory of comrades and colleagues whose ineluctable departure we deplore. They belonged to our professional family and worked at our side. The casualty list is long and our loss is severe not only in numbers but in personal ties and associations.

Our relationship to these men differed materially in time, place, duration and intimacy for they joined us on divers occasions and under dissimilar conditions. Some had reached the wisdom of three score years and ten while others were still fighting for their youthful ideals. Their achievements, too, were in no way uniform for the Reaper has no consideration for human hopes and expectations. His decisions are ruthless.

Our comrades came to us from various kindreds and from various states in America and elsewhere and in consequence their lives were modified and disciplined by many different circumstances. As they grew and expanded mentally they shared in and cherished probably all the dreams that stir and fascinate the imagination of youth. But youth travels on nimble feet and these dreams may or may not have been fulfilled. Dreams however beget ambition and inspire wisdom, hence, lured by the extraordinary interests of science in its human applications these men studied medicine. Their professional activities have been spread before the public and what each of them has accomplished, his friends know, appreciate and applaud, for their vocation was familiar and manifest to the eyes of society.

The rest we cannot learn. We cannot penetrate the sealed arcana of their inner lives, of the hopes and fears, of the dreams and visions of ultimate attainment. We have the dates of birth into the world and of the fateful termination. But what a host of psychic adventures must have occurred in that strange progressive interval wherein birth is naught but an introduction to Raleigh's "eloquent, just, and mighty Death, whom none could advise."

Such psychic experiences however are of necessity esoteric for who can trace the mute gropings of the primitive soul as it struggles up from oviparous inception to a well rounded maturity? Who can witness the painful moments of indecision, solve the mysteries of anxious solitudes, or the ardent longings of those wakeful nights which each alone could know? How few indeed are the men who can themselves recall the guide posts of their mental and emotional progress?

Were our colleagues born in the North or the South, in the East or the West? Wherever the place, whatever the season, or how variable the day, they died *here* in obedience to a blind, formless, insensitive Fate. They left dream castles unfinished, ambitions unsatisfied, and hearts desolate. The ebb and flow of the seasons, the zeal for professional excellence, the vicissitudes of good and evil, affect them no more. As a modern orator remarked, in self consolation, "Whether it be near a friendly shore, or in mid-ocean, on a peaceful sea, or among storm-tossed breakers, a wreck must mark the end at last." To meet and endure these human sacrifices requires the utmost endowment in philosophy, fortitude and religious faith among the families and friends of those untimely taken away. David's anguished words forever voice the riven heart, "O Absalom, my son, my son, Absalom."

Many of our friends were born in this state where the myriad souls of wheat and corn are garnered to gratify man. They were born where brooks and rivers run calmly or impetuously through broad, fertile acres; where buttercups and daisies glow like stars on a firmament of green; where crystal lakes divide the forests, and summer breezes, laden with the perfume of fragrant blossoms, wimple the water, bend the fields of grain and carry in every direction the felicitous songs of birds. It was a region they learned to love with an intensity that gathered strength with their growth.

We must assume that when their purposes became hardened and defined, our comrades left these congenial scenes reluctantly, drawn by the magnetism of the city; drawn by that chant of battle where the fermenting energies of mankind wage constant war in an effort to win, to hold, or to improve the fruits of civilization. For

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medical men are not content with mere animal satisfactions. They begin and pursue their careers in the belief that life as a business is the servant of character and the tyrant only of ignorance, pretense and shams. As they believed so they labored, and brought forth priceless brain children for the benefit of humanity. In this conviction they lived and strove and loved but, ready or otherwise, they *fell,* amid the toils and tumult of a never ceasing conflict. Their reasoning minds met with unreasoning foes and they left us to become comrades in God. Thus ever we strive and strain in unremitting quest of a fancied good. We build as strenuously as the coral insect, and like him we disappear content if we have left some minute constructive atom in the world and, more happily, an unfading remembrance in the heart of a friend.

In the first twenty years of life, one saps strength and vitality from his environment but adversity attends existence like a monitor to test our manhood and verify the fulfillment of our birthright. It is Nature's law which is imposed without the slightest feeling or concern. A soul sets forth with high ambitions, immortal yearnings. Every energy is devoted to their attainment. The man may win, but in the moment of victory Death, the universal enemy, stays his hand. He may fail, yet he, as well as Browning might say, "What I aspired to be and am not, comforts me." The fruits of his adventure, however, are not lost for it is the conception and the experiment that gives joy rather than the solution.

We live in the present. In this everlasting NOW we breathe and have our being. What the future may contain is only speculation. The future is fairyland as visioned by youth, but maturity goes out to meet the doubtful shadows with the eye of a hunter but also with the resolute heart of the quarry who is conscious of an unavoidable defeat.

Omar, the Persian poet of eight hundred years ago, has fitly described our ignorance and our helplessness amid the immutable Fates who scan and judge and slay:

"We are no other than a moving row
Of Magic Shadow-Shapes that come and go
Round this Sun-illumined Lantern held
In Midnight by the Master of the Show;
Impotent Pieces of the Game He plays
Upon this Checker-Board of Nights and Days;
Hither and thither moves, and checks and slays
And one by one back in the Closet lays.

The Ball no question makes of Ayes and Noes
But Right or Left as strikes the Player, goes;
And He that toss'd you down into the Field
He knows about it all—He knows! *He knows!*"

But I don't. I do not know. Nor did our friends know. If I have measured the medical character aright, the larger number of our colleagues looked upon the social phenomena and beliefs of the age more or less abstractly. They felt that the major problems of this world and the next would be managed by an indefinite band of shadowy officials who were probably delegated to attend upon such matters without their individual aid.

Their own vocation, more intimate and precise, involved a career of highest civic duty marked by color and change, by hardship, responsibility and intense application. They lightened the burdens of mind-weary mates and cheered the dubious heart of the infirm by wise philosophy. They relieved the suffering body, pointed the pathway to safety among the snares and pitfalls of an ever hazardous existence and postponed or averted when possible the inevitably tragic end. They took on no personal quarrel with life or Fate but seemed to accept defeat or victory with the equanimity and fortitude of the Happy Warrior who is invincible in soul. Thus their characters were cast in the true medical mold; a state marked by the inner serenity that comes from self control and the animated moderation that dwells with wisdom.

Some of these comrades may not have lived in the atmosphere of a medieval creed. Their spirits may not have felt any tingling response to supernatural revelations and so in some respects they were outside the pale of those who have this consolation. But were they not thereby enrolled among Shock Troops; among those who conducted themselves as excellent citizens according to their own convictions without fear of future penalty or hope of ultimate reward? Is not that character just as worthy which reaches its supreme development without ceremonial support or ritualistic stimulation? A morality

which finds expression in the warm hand clasp, in words of cheer to the discouraged brother, in quiet deeds of helpfulness and of friendship—that most comforting flower that blooms along the rough highways and beside the sodden quagmires of life; the friendship which carries light, relief and happiness to every fellow traveler.

God did not pour all his sunshine into corn, and fruit and flowers. He scattered the rays of His countenance prodigally over the universe. Are they wasted? Is this radiance lost in the immensities of space?

God paints opalescent pictures of mirage above the palpitating heat of the desert and sprinkles sunbeams like diamonds over the bosoms of lakes which bedeck the verdant garb of Nature. He drapes shimmering webs of aurora about the cold shoulders of the Poles and lights the lanterns of the Great Bear as he prowls in ceaseless vigilance around the Northern Star. He spangles the canopy of night with the quivering sparks of the Milky Way and with the giant suns of the Pleiades. He silvers the landscape with beams reflected from Cynthia's inconstant face and draws the crimson cincture of the west across the sleeping glooms of the sun.

The Daughter of Dawn rises silently from her dark boudoir, climbs the steps of the Orient and flings wide the Gates of Morning. On soundless wings she speeds exultant over the vast terrene and wakens the birds to herald with ecstatic voice the coming of her King who floods the world with refulgent gold; a magnetic splendor to which every plant and animal clan turns in warm and happy gratitude for revival, refreshment and repair.

No ray of light is wasted, nor a single sunbeam lost, but all contribute to the welfare and happiness of earth-born life. So with mankind anyone, who by the use of treasure, knowledge, or personality is able to smooth one wrinkle from the brow of care, or change one moan or sob into blithesome song; who can wipe away one tear and in its place put a shining jewel of joy—such a man is a human benefactor and such were our friends and colleagues who have passed on into the fathomless silence. They sided with the weak, and with willing hands gave aid to the sick and despondent. With loyal hearts and firm souls they quietly performed their protective and merciful missions and discharged faithfully every public and private trust. We can bestow no greater praise than this.

We come again into the presence of the Great Mystery. We *know* nothing about it. We have our hope, our faith but no certain key to its solution.

Life is but a narrow vale between two measureless eternities which philosophers and seers have labored to explore and define ever since the tremulous dawn of reason, but these efforts in a physical sense have always failed. With much less promise can the present speaker venture to question or deny the existence or the non-existence of these enigmatic profundities, for he makes no claim to extra mundane curiosity, to ministerial dialectics, or to sacerdotal certainty of creed.

I have no knowledge of a future life. Nor can I say there is none. Though reared rigorously in the Faith of the Fathers I can only say I do not know. I have watched the lich-gate close behind many and many a pilgrim, but no word has come back to me. Azrael's wicket swings incessantly to and fro on the silent brink of Time but across that vast unscanned abyss lies the blackness of oblivion through which no traveler has ever returned. I do not know. I do not know either whether it is better that my own or other ashes should go at last to feed the roots of the soft, green herbage, the flowers or the trees: to be blown about in protean forms by the law of indestructibility of matter, or whether it is best that I continue in personal identity beyond the veil which we call death.

We hope to meet our friends again, if not in Paradise, Elysian Fields, or Valhalla, then in "desolate wind-swept space, in twilight land or, No Man's Land." I say we hope to meet again but if the present existence be all, then "after life's fitful fever" our friends sleep well. Nothing can harm them further. God knows what is best.

We often become wearied, exhausted in the course of human affairs with its conflicts and complexities. The feeling is well nigh universal. We seem to be curbed, cloistered and caged like a bird from the wilds that in its mad desire for freedom will beat its wings futilely against the bars and strive for release, for escape, even by

death. It may be that extinction of life is but an outward sign which marks the movement of the soul into broader and freer stretches of spiritual being. We may stand perhaps in the very presence of the "Angel of the Darker Drink" and have no knowledge of the path he prescribes, but always, no matter how dark the clouds that hang before us, there gleams through murk and disarray the Star of Hope; the hope that this beckoning beam bespeaks the coming of that long-looked-for millennium in which "there shall be no more night."

Since the world rode out of chaos on chariots of flame, day is always dawning somewhere. Down the resistless stream of time spins the ever wheeling earth flung by the hand of God, and with every revolution light and life are abundantly ushered in. Let this be the auspicious symbol of our faith. Perhaps we can believe that in the evolution of the human soul, as it moves on toward its destiny, that it is constantly swinging nearer and nearer to some new spiritual sun whose resplendent disc pours out a soft, cool and unremitting effulgence; a sun which does not set like our own fiery orb. This assumption prompts the thought that when our sun goes below the horizon he is not set; the heavens glow for a full hour after his departure and so when the vital spark of man goes out the radiance of his personality illumines the sky of his world for a long time thereafter.

Thus it is with these friends of ours to whom in memoriam we must say Good-Bye. Farewell is a bitter word which closes all earthly friendships and finishes every feast of affection. It breathes despair. So now we say Good-Bye to our friends and former colleagues as we knew them. The philosophy manifested in their lives we must try to exemplify in bearing the distress and pain of our separation. Words fail and speech is vain. Let these flowers with their petalled lips and perfumed breath convey to them in beauty and in fragrance, those sentiments which are too intimate and ethereal for vocal expression. Our silent comrades shall abide in our hearts until we join them in realms of eternal withdrawal and infinite change. *Morituri te salutamus.* We who are about to die, salute you.

30 No. Michigan Ave.

References: Knickerbocker, Browning, Shakespeare, Beecher, Omar Khayyam, The Bible, Ingersoll, et al.

THE DIAGNOSIS AND TREATMENT OF TERTIARY SKIN SYPHILIS

B. Barker Beeson, M. D.
CHICAGO

Tertiary skin syphilis appears most often during the third year after the chancre. According to Fournier's statistics 70% of such lesions occur during the first ten years of the disease. It is not inevitable since early and adequate treatment may prevent it and it may be missing in some of the so-called benign cases. Its appearance may be greatly delayed as in Petit's patient quoted by Burnier in Jeanselne's recent treatise on syphilis, in whom a nodular syphilide at the age of 87 years was the result of an infection acquired when the man was 20 years old. Fournier has stated that 90 to 91% of those presenting tertiary skin syphilis have had benign secondary skin manifestations. In his opinion and no clinician speaks with equal authority the chief cause of tertiary cutaneous syphilis is insufficient treatment.

The skin lesions of this period are the nodule or tubercle and the gumma. In contradistinction to the secondary lesions they are usually fewer in number, not so generalized, more monomorphous and more deeply seated, healing with scarring. The nodule is the more frequent. It is non-ulcerated or ulcerated in which case it is a minature gumma beginning in the derma instead of the in the subcutis. When purely nodular it is slightly convex, orbicular, the color of smoked ham, lentil-sized most often, firm and set into the skin much as a watch-crystal is held in its case. It is dry and scales slightly. In reality it is a large deeply-seated papule. Such nodules are most often found over the face, the alae nasi and the forehead but they may appear anywhere on the body. These nodules often present an orbicular formation like a circle studded with nodules, as a collar of pearls, in which case such a circle of lesions surrounds an area of healthy skin, as an arciform affair simulating a crescent, a half-moon, a kidney or a horse-shoe or as a series of excentric circles. This latter formation is especially characteristic of syphilis. Less frequently plaque formation results from the union of a number of nodules. In such cases the individual lesions are not ap-

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parent but a thick, firm, elevated, smoked-ham colored, well-defined, slightly scaling patch is present. This is most frequent on the palms and soles where it is definitely psoriasiform.

The nodulo-ulcerative lesions begin as nodules which soon break down and ulcerate. They are usually multiple and frequently spread slowly scarring as they advance. Such an affair is termed serpiginous and is pathognomonic of syphilis. When fully developed a nodulo-ulcerative lesion consists of an ulcer covered by a crust, the whole being seated on an indurated base. The crust is firm, compact, set into the skin, circular or polycyclic where several lesions have coalesced, dark in color, often greenish, with a close resemblance to an oyster-shell. Such a lesion is often spoken of as rupial. The ulcer is round, punched-out, with firm adherent borders and a dark reddish peripheral zone. Its floor is uneven and covered by a core resembling cooked codfish or by a creamy coating. Such a lesion heals with scarring of a particular type which when present is strongly suggestive of syphilis. Such a scar is circinate and red at first; later it becomes brown or even blackish and may remain so for years. As it fades centrally a brown ring surrounds the atrophic scar which is somewhat depressed and in texture resembles an onion-skin. It is of course indelible and is of prime importance from the retrospective standpoint especially when grouped closely, en bouquet as Fournier has said.

As to diagnosis the four chief points relative to the nodular syphilides are their firmness, the smoked ham color, their orbicularity and circinate grouping. At times one hesitates when confronted with a non-ulcerated lupus vulgaris which however has its apple-jelly nodules, its very soft tissue, and extremely slow course as compared to syphilis. Lupus erythematodes is less infiltrated, has more abundant and adherent scaling, tack-like processes which go down into the follicles, and stippled scarring. Acne necrotica, which may lead to confusion, appears in crops especially over the temples and along the hair line. Its lesions are frankly inflammatory and lack the color and firmness of the syphilitic nodules.

The nodulo-ulcerative syphilide may be confused with a number of conditions among which may be mentioned leg ulcer, sporotrichosis, cancer, ecthyma, tuberculosis, the bromide and iodide eruptions. Fournier may be most appropriately quoted as follows in regard to leg ulcer. "Given any sort of an ulcer of the skin, one should always in making its diagnosis reserve a place for syphilis, no matter who the patient may be, whether he gives a history of syphilis or not, and all of this because of the frequent surprises by reason of the numerous cases of ignored syphilis." A simple leg ulcer is usually described as being situated in the lower third of the leg, often close to the internal malleolus and it is most often unique. It has no special configuration and is not punched-out, but has sloping edges. Its floor is not creamy nor does it possess a core which resembles cooked codfish. It is not crusted as a rule. Varicosities may be demonstrable. Cases in which syphilis affects a varicose limb are indeed difficult of diagnosis. Not a few so-called leg ulcers are accompanied by a positive Wassermann reaction and they may respond quickly to appropriate treatment. A careful search should be made for other evidence of syphilis. The therapeutic test may be the court of last resort. Favre of Lyon, France, has described cases which he termed "Dermite pigmentée et purpurique" some even showing gangrene. All of them were due to syphilis and they presented phlebitis and periphlebitis which as to pathology resembled the changes seen in syphilitic arteritis.

An ulcerative lupus vulgaris does not possess the configuration of syphilis. It is irregular with a soft base and undermined edges. It is a torpid affair. Characteristic nodules may exist about the ulcer.

Sporotrichosis presents lesions which when broken down are more fistulous than ulcerative. They are soft and do not possess a core. A culture readily makes the diagnosis.

A squamous-cell cancer is unique usually. It is often everted with a board-like hardness and bleeds easily. The neighboring lymph-glands are soon involved. A biopsy would settle the question if one were in doubt.

Ecthyma is more inflammatory than syphilis. It begins as a vesicopustule which ulcerates superficially. Its base is soft and it is auto-inoculable.

Iodide and bromide eruptions may be confused with the nodulo-ulcerative syphilides. A history of ingestion is usually obtained. An iodide eruption runs an acute course, is more

inflammatory and lacks the firmness of the syphilitic nodule. It is more acneiform than ulcerative. A bromoderma is frequently vegetating, is soft and superficial and lacks the characters which the nodulo-ulcerative syphilide presents.

A scrofuloderma affects by choice the neck; its ulcer is soft, undermined, has a bluish halo; it is really more of a fistula and does not have a core but suppurates freely.

The four stages of the gumma are too well known to require mention here. The gumma occurs most often from the third to the sixth year after the onset of syphilis. Fournier has noted its appearance fifty-five years after the chancre. Its favorite site is the leg especially just below the knee. A gumma usually lasts two to three months. It is unique in 60% of cases. At times such lesions are multiple and form plaques. When ulcerated it presents the same attributes as the nodulo-ulcerative syphilide except that it may be much larger. Its differentiation is discussed under that same heading, so repetition is not necessary.

A clinical diagnosis of tertiary skin syphilis is often possible. Some cases will tax the most skillful and in them laboratory measures may be of extreme value. Animal inoculation and a dark-field search for the Spirocheta pallida would be of slight value in tertiary lesions. A biopsy would distinguish them from cancer but might be confusing in tuberculosis. Serological procedures should not be neglected even though the Wassermann is frequently negative in late lues. A careful examination, especially of the mouth, throat and tongue, may disclose valuable corroboratory evidence in the form of a tertiary glossitis or a perforation of the hard or soft palate. The presence of lingual leukoplakia may constitute important evidence. The knee-jerks, Achilles and pupillary reflexes should be explored. The heart and aorta must not be overlooked. The therapeutic test may be of real value when done with arsenic, bismuth or mercury. Potassium iodide should not be employed for this purpose since it acts also in certain of the mycoses.

Treatment.—One can very appropriately quote from Schamberg and Wright:

"The treatment of late syphilis differs essentially from that of early syphilis, for the aim and object are not the same. In early syphilis the therapeutic goal is the extermination of all of the invading parasites in the body, with as vigorous an effort as is consistent with safety to the patient. In late syphilis, the purpose of treatment is to effect a removal of the presenting symptoms, to prevent their return and to keep the patient in good health for as many years as possible. The question of effecting a radical cure in late syphilis is not one that demands immediate attention. The patient, having had for a number of years a luetic infection with inadequate or no treatment at all, in all probability has lesions which interfere with the structural integrity of his organs. Such patients are prone to have aortic lesions or atheromatous changes in some of the blood vessels, or lesions elsewhere. The chances of eradicating the disease after long years of residence of the spirochete in the tissues are not at all favorable. Vigorous treatment with the idea of bringing about a radical cure is ill-advised and prone to do harm. Many patients have had their lives abbreviated by too zealous an effort on the part of the physician to overcome the disease."

When seeing a patient with tertiary skin syphilis even though he or she appears in excellent health one should make a thorough examination as has been mentioned when referring to the diagnosis of these skin lesions. The results of such an examination are all-important since they largely decide what can be safely done for that particular patient and thus influence his future to a marked degree. It must be remembered that one is not merely treating the existing skin lesions but the body as a whole and any abnormal finding should add to one's conservatism since in this instance we are dealing with those who are apt to be damaged goods.

If one's patient is found to be in good condition then he may be treated by the combined method using neoarsphenamine and bismuth. Such a course would consist of 8-10 injections of the former with a total dosage of four-five grams plus ten to fifteen injections of iodobismuthate of quinine with a total dosage of two to three grams. The initial dose of neo should not exceed 0.15 gm. The bismuth may be given twice weekly and the neo every seven days. To save time one injection of each may be given at the same visit. For the first year such a course should be followed by a rest of at least one month, after which it may be repeated as required. Tertiary skin lesions respond quickly to either neo or bismuth but heal more rapidly under this combined treatment. It may be well at times to reduce the number of injections of neoarsphenamine to six in a course. As Jadassohn has said it is rarely necessary to give more than 0.60 gm. of neo to a man or 0.45 gm. of that same drug to a woman. Such conservatism

in dosage is particularly applicable to late syphilis. If our examination reveals an aortitis, a nephritis, or a liver involvement, then the rules for treatment will require revision. Sézary, a well-known French clinician, favors bismuth or mercury rather than the arsenicals in aortitis. Schamberg and Wright believe that Ehrlich arsenicals may be used in selected cases of cardiovascular syphilis. They prefer beginning treatment with bismuth or mercury. In chronic nephritis complicating tertiary syphilis Sézary suggests intravenous injections of mercury cyanide. Later a soluble bismuth salt may be given if necessary. When the liver is damaged in tertiary syphilis a soluble mercury salt or bismuth preparation is preferable to an arsenical. It is often difficult to determine whether these visceral changes are due to syphilis or not. At times tertiary lues may be best treated with bismuth alone. Besides I. B. Q. already referred to iodobismitol is an excellent salt as is also bismogenol which is a bismuth salicylate. In old cases of syphilis which show little activity mercurial inunctions are in order. They constitute a slow but valuable method. Potassium iodide has lost much of its popularity in the treatment of teriary skin syphilis with the advent of the newer agents. It is still employed in cardiovascular syphilis, in joint involvement, in eye lesions and in central nervous affairs. Potassium iodide may be given alone or combined with the other remedies. It is best given by mouth, intravenous injection being unnecessary. Fournier recommended 3 to 4 grams per day believing that there was no advantage in larger doses. Mercury salicylate is an excellent insoluble preparation which may be advantageously combined with neoarsphenamine. Of the soluble mercury salts the bichloride is deservedly popular.

CONCLUSIONS

1. A careful physical examination should precede the treatment of any patient with tertiary skin syphilis.

2. Because such persons are frequently "damaged goods," treatment should be conservative both as to the drugs employed and their dosage.

3. It is better in such patients to carry on with a mild but long-continued treatment than to take chances with more radical measures which could be not only dangerous but fatal.

4. Neoarsphenamine plus bismuth is an excellent combination which should be used whenever possible. Bismuth even alone is often of distinct value and it appears to be preferable to mercury, in most instances at least.

5. Any ulcer of the skin may be due to syphilis. If this fact is kept in mind it may result in not a few surprises.

6. Clinical means of diagnosis should not be neglected in the skin lesions of syphilis. If the characteristics of such lesions are kept in the foreground they will do yeoman service.

7. The Wassermann and Kahn tests are extremely valuable but they should not be regarded with that simple and child-like trust which passeth all understanding.

8. Emphasis should be placed on a thorough examination of the central nervous system not omitting a study of the spinal fluid. (Paper was accompanied by lantern slide demonstration.)

30 North Michigan Avenue.

DISCUSSION

Dr. William K. Ford, Rockford: If we exclude yaws, carefully controlled and repeated 4 plus Wassermann reactions means a patient has syphilis. The difficulty lies in the moderately positive tests in patients without symptoms; here we must use other tests such as Kahn, Klein, Hinton. A provocative injection of arsphenamine followed by several blood tests is a good procedure in patients with gummatous lesions.

Tertiary or late syphilis is characterized by a wide diversity of location and extent of lesions (involving almost any structures in the body), and often disturbs vital function. There is also a wide individual variation of the degree of resistance against infections; some patients go through life without outward signs of disease and others develop one disfiguring or crippling lesion after another.

The first aim of treatment is symptomatic relief, the restoration, where possible, of anatomic normality, or at least functional normality.

The second aim of treatment is to maintain the patient in good health, free from progression or relapse, for the balance of his life.

A patient with tertiary lesions or having latent syphilis is usually in middle or advanced age and often presents evidence of senility. The syphilitic infection is often complicated by more serious conditions of health and they are frequently poor risks. As they are usually not infectious, we do not have to consider the problem of sterilization by intensive treatment.

The Wassermann reaction becomes negative only in

two to five years and there is much uncertainty as to the significance of a negative test in this stage of syphilis.

In elderly syphilitics we try to relieve the symptoms with the least amount of medication and minimum discomfort to the patient. A good rule to follow is to give no arsphenamine to any patient over 50 years of age unless specifically indicated and then use only small amounts at weekly intervals with the patient under careful observation. Alternate courses of mercury or bismuth supplemented by potassium iodide or mixed treatment: mercuric chloride 1 gr.; potassium 15 gr.; elixir lact. peps. q.s., t.i.d.

In patients between forty and fifty years it is difficult to know how intensive to be. If expectancy is twenty to thirty-five years, then we should make a special effort to a negative Wassermann by treatment over several years with alternate courses of arsphenamine and bismuth. Two or three courses of 15 weeks bismuth, 10 weeks arsphenamine should be followed by five or six months of rest on mixed treatment. Then one course of bismuth and arsphenamine are given and again rest on mixed treatment.

Frequent physical examinations, Wassermanns, urinalyses, blood counts and spinal fluids should be performed.

Careful technic is very important. Arsphenamine dermatitis usually means a break somewhere in the technic or the administration of too large or too frequent doses or both. Sensitization arsenic dermatitis is probably due to paravenous infiltration with the drug.

Watch for the symptoms of poisoning during treatment. Our most valuable and effective drugs are poisonous and these patients are suspectible to jaundice, dermatitis and neuritis. Blood chemistry should be taken before and after the first course. The icterus index is a good guide to the liver tolerance for the drug (arsenic). If index is 15 or above, it is best to stop and give sodium thiosulphate until the index has returned to 10 or below.

The blood might well be tested for arsenic during a course and if it reaches .09 mg. per 100 c.c. or over it indicates that the patient is receiving arsenic from some outside source or is showing undue retention. In this case it is best to discontinue the drug temporarily until .08 mg. or lower is reached.

No group deserves more careful preliminary study and many sided follow-ups than patients with late or tertiary syphilis.

Dr. B. Barker Beeson, Chicago (closing): I think I might have stated that the persistently positive Wassermann is often a problem and the question is what to do about it. No one seems to know. There is no routine treatment. I think one should stress the conservative aspect of this problem and if, after several years of common sense treatment, the Wassermann is still positive, I think it is foolish to go on with the vigorous treatment. No one knows what the persistent Wassermann means and I think we should not rush in where angels fear to tread.

CONGENITAL DYSFUNCTION OF THE SALIVARY GLANDS WITH OBSERVATIONS ON THE PHYSIOLOGY OF THIRST

V. Thomas Austin, M. D.
AND
F. R. Steggerda, Ph.D.
URBANA, ILLINOIS

Congenital absence of salivary secretion is a rare anomaly. Despite its simplicity of recognition, the literature contains reports of only four cases in which all salivary glands were reputed to be deficient. Congenital absence of the submaxillary glands alone has been reported by Gruber[1], and Bruno [2]. Nayak[3] in 1926 reported the anatomical dissection of congenital absence of the parotid glands and considered it the first case in the journals of anatomy.

The first report of congenital absence of all salivary secretion was made by Fasoli[4] in 1914. He reported an associated diminution of lacrimal secretion, early and extensive dental caries, and a reduction of taste. In 1924 Ramsey[5] reported congenital absence of salivary glands in father and daughter, both suffering early dental caries. In 1925 Blackmar[6] reported a case of congenital absence of salivary glands with associated atresia of all lacrimal puncta, but considered the lacrimal secretion normal. This case likewise showed marked dental caries. In no case was mention made of a disturbance of thirst.

We should like to present in greater detail what appears to be a similar case of salivary dysfunction. The case was that of a white male, aged 28 years. The family history was essentially negative. The past history was negative except for diphtheria at 5 years of age. Dry mouth had been recognized since infancy, and the patient habitually moistened his mouth with a few sips of water about every hour. However, when the occasion demanded, he could go as long as two hours without marked discomfort, and the dry mouth did not interrupt his sleep. Eating was made possible by drinking water throughout the meal and avoiding dry foods. His deciduous teeth were early lost through dental caries. The permanent teeth were so carious that at 21 years of age all except two lower lateral incisors, these being heavily crowned, were removed. The

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upper false dentures had to be held in place by a thick mucilage. There had always been a reduction in lacrimal secretion so that crying never produced tears. Because of chronic dacryocystitis the right sac was extirpated at 10, and finally, the left at 27 years of age. No tearing had followed. The vision of the right eye had been impaired since his earliest recollection. The right testicle had always been much smaller than the left.

The conjuctiva appeared normally moist, and the cornea clear. There was evidence of previously patent lacrimal puncta. There was a compound hyperopic astigmatism with right congenital amblyopia. Scars were present from previous surgery on the lacrimal sacs. The mucous membrane of the nose was moderately moist and somewhat atrophic. The mucous membrane of the mouth appeared dry and the tongue heavily furrowed. There was marked pyorrhea around the two remaining crowned teeth. The ostia of Stenson's and Wharton's ducts could not be found. Along the lateral surface of the tongue, near the floor of the mouth, were a few glistening points representing probable secretion from the glands of Weber. The tonsils were small and fibrous. The pharynx appeared drier than normal. Laryngoscopic examination showed a moderately dry mucous mebrane. There was no evidence of aberrant salivary gland tissue. The process of milking the parotid ducts produced no salivary secretion. The submaxillary glands were not palpable.

The urinalysis was negative. The homoglobin estimation was 90% (Dare). The erythrocytes numbered 4,290,000, and the leucocytes 8,400 per cubic millimeter of blood. The differential count showed 31% lymphocytes, 67% neutrophiles, 1.5% eosinophiles, and 0.5% basophiles. The serologic test for syphilis was negative. The blood urea measured 20 milligrams per cent. The blood sugar measured 125 milligrams per cent with a normal glucose tolerance curve. The basal metabolic rate was —1%. Gastric analysis showed a total acidity of 74% and a free hydrochloric of 60%, with no retention. X-rays of the two remaining teeth showed the right lateral incisor to be devitalized, with bilateral unerupted first bicuspids of the second dentition. X-rays of the sinuses showed a cloudy right antrum. X-rays of the lumbar spine showed a spina bifida occulta of the first sacral vertebra. Teleroentgenogram of the chest, as well as fluroscopic examination of the stomach, was negative.

A study was then made of the threshold stimulus for taste in this patient and compared with four apparently normal controls. It was obtained by ascertaining the minimal concentration of a solution of the four substances to be tested capable of arousing a taste sensation. As the table indicates, the patient's acuity compared favorably with that of the control subjects as well as with the generally accepted normals.

TABLE I

A COMPARISON OF TASTE SENSATIONS

Name	Salt NaCl gm/100 cc.	Sweet (Dextrose) gm/100 cc.	Acid HCl gm/100 cc.	Bitter (quinine) gm/100 cc.
C. D.	.25	.563	.0087	.00005
F. R. S.....	.375	.375	.0087	.000063
R. K.	.438	.688	.0070	.00005
R. E. D.....	.25	.438	.0053	.000013
Average	.328	.516	.0074	.000046
Patient (D. M.)..	.375	.625	.0087	.000038
Threshold according to Howell's text.	.25	.500	.0070	.00005

In an effort to show quantitatively the salivary and buccal secretion the following experiment was conducted. The patient and three apparently normal controls in the same age group were used. The subjects refrained from swallowing while a suction tip was moved continuously about the floor of the mouth. The aspirated secretion was measured for five minute intervals. As the graph shows, the controls averaged 3.2 cc. per unit of time, whereas the patient secreted too little to be measured. Each subject was then given 6.0 gms. of pilocarpin subcutaneously and the five minute interval secretions recorded. As shown, the normals increased their output by 700%, reaching a maximum in twenty minutes, and the patient responded sufficiently to collect 0.1 cc. during the first period. This consisted of a thick tenaceous mucus from the floor of the mouth lateral to the tongue. The patient sweat profusely as did the controls.

Thirst has been defined as a sensation of dryness of the mouth and throat and a craving for liquid. It is a matter of common knowledge that local conditions which cause a dryness of the mouth produce a sensation interpreted as thirst. This is observed with prolonged speaking or singing, mouth breathing of dry hot air, or chewing of dry foods. On the other hand, two general theories have been introduced to account for thirst in general dehydration and its abolition

by either rectal or intravenous administration of fluid. The first is that dehydration produces stimulation of many sensory nerves, and that the sensation is referred to the throat because of the mental association between thirst and drink. The second theory is that dehydration results in a decrease of salivary and buccal secretion with a resulant dryness of the mouth and throat interpreted as thirst.

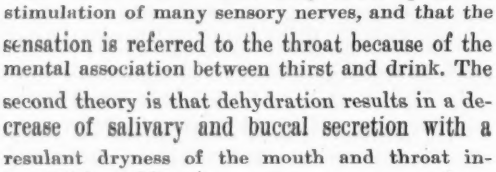

Fig. 1. A comparison of Salivary and Buccal Secretion. The output of the controls is shown in the upper curve, while that of the patient is shown below.

In support of the second view Cannon and others[7, 8] have claimed that the salivary flow governs the daily fluid intake of animals. Montgomery [9, 10] in a recent study of dogs before and after extirpation of the salivary glands, was able *to show no appreciable difference in their average* intake. She observed, however, that the mucous *glands in the dog were sufficient to keep the* mouth quite moist. More recently Gregersen and Cannon [11] have attempted to overcome this feature by exposing dogs to a temperature of 40° C for two hours at a time and recording the fluid *intake during this period. They observed that* after the removal of the salivary glands the *animals in some cases drank 100%* more water, but only during the period of increased temperature. This, they argue, shows the influence of the salivary glands in the regulation of fluid intake. Is it not possible that their results were *disturbed by bringing in the factor of heat regu*lation, which in the dog depends in part on the evaporation of moisture from the mucous membrane?

It is our good fortune to have in this patient *an experimental subject peculiarly adapted to* this investigation. He has no salivary secretion and the mucous glands are not sufficient to keep the mouth moist. Data collected concerning his daily fluid intake for eighteen days was compared with four normal individuals under similar circumstances over the same period. As the table indicates, the average daily fluid intake does not differ appreciably from that of the controls. The only difference we found was that the patient drank water on the average of twelve to eighteen times daily, and then just enough to moisten his mouth, while the normal individuals drank only four or five times a day in much greater quantities.

TABLE 2

A COMPARISON OF FLUID INTAKE

(AVERAGE 18 DAYS)

Name	Water cc.	Coffee cc.	Tea cc.	Milk cc.	Total cc.
M. E. J.....	1806	736	903	278	3723
L. P. K.....	1940	270	130	103	2443
M. J. S.....	1411	214	55	380	2061
F. R. S.....	1803	144	56	217	2232
Average	1740	355	286	245	2615
Patient (D. M.)	1975	191	260	357	2783

Upon careful questioning, and after due consideration, the patient, a university student, *stated that he differentiated between dry mouth* and a sense of thirst. Sips of water which would moisten his mouth could still leave a sense of thirst, and thirst was not always experienced when his mouth was dry.

CONCLUSIONS AND SUMMARY

*1. A case is reported with congenital dysfunc*tion of the salivary glands, hypofunction of the lacrimal glands, unilateral congenital amblyopia, unilateral testicular atrophy, and spina bifida occulta.

2. Extensive dental caries was observed in this and all previously reported cases. A similar dis*turbance has been observed in cases of acquired* xerostomia. Apparently, freely flowing saliva is a prerequisite to sound teeth.

3. Anomalies of the lacrimal apparatus were observed in three of the five reported cases. This *is of interest in view of the close relationship be*tween salivary and lacrimal pathology as ob*served in Mickulicz' disease.*

4. Our case showed no disturbance of taste as was observed by Fasoli.

5. What significance the atrophic testicle might have in the absence of a history of epidemic *parotitis is highly speculative.*

6. Absence of salivary secretion did not increase the average daily fluid intake in this in-

dividual. If thirst is the only factor which governs fluid intake, then it must be a more complex mechanism than dryness of the mouth and throat.

—Carle Hospital Clinic and Dept. of Phys., U. of Ill.

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DISCUSSION

Dr. Earl A. Zaus, Chicago: Congenital dysfunction of the salivary glands is rare. The literature contains reports of only four cases in which there was an absence of all the major salivary glands.

Through the intermediary of Dr. Vischer we have been asked to discuss this case because during the last eight years we have seen a similar case in a child who is now ten years old. The case has not been reported but in many ways it is very similar. Our patient had no dysfunction of the lacrimal ducts, and I think the Doctor has proven that the salivary glands are not the major factors in thirst. We feel the same way about it. Our patient has no excessive thirst.

In the Physiology Department of the Northwestern University Dental School, we were more interested in two other angles of this peculiar congenital dysfunction. We were interested in the dental caries which was so rampant. The other thing is the fact that, as has been shown before, the saliva is not particularly necessary for normal digestive functions. One can almost say definitely that we do not need the ptyalin in saliva to produce normal digestion of carbohydrates. A few years ago, Bergeim, investigating the relation of ptyalin to starch digestion, came to the conclusion that deficient ptyalin action did not interfere with carbohydrate digestion. The investigator concluded that excessive starch intake influenced the digestion of proteins, through the absorption of pepsin, more than any other factor in digestion.

This anomaly is probably an anomaly of the formation of salivary glands but it is peculiar in that these three groups of glands, parotid, submaxillary and sublingual, are not produced from the same anlage and so that this fetal mal-development is a peculiar quirk of nature.

We are interested mainly in the dental angle. You may be familiar with the theories of dental caries and know that they are based upon the fact that saliva is protective. Some say that it is supersaturated with calcium and that teeth cannot dissolve. It is also believed by some that saliva washes away the acids and buffers them. Another theory is that certain salivas have an immunity to some bacteria which are known to produce large quantities of acid. There have been many investigations of this problem on the health of teeth. Mrs. Montgomery reports in her article that none of the dogs in which the salivary glands were removed developed any evidence of dental caries. We have a better piece of work done by Kanthak on monkeys. In these monkeys, eleven months after operation, it is rather interesting to find that none of them developed caries.

I want to close by saying that we are repeating this work on rats. We operate upon them at the age of twenty-six days and take out all the major salivary glands. Now, after four months, we have produced nothing like the dental caries we see in man.

Dr. V. Thomas Austin, Champaign (closing): I should like to thank Dr. Zauss for his interesting discussion. It is possible that the difference in the results in the experimental animals and the humans is due to the difference in mucous secretion, it being abundant in the dog and not in man.

A SURVEY OF THE PRESENT STATUS OF ELECTROCOAGULATION OF TONSILS

LOUIS SAVITT, M. D.
CHICAGO

Definitions.—In discussing electrocoagulation of tonsils the terms fulguration, desiccation, and coagulation have been used with considerable confusion. I will define them at this time so that the subject matter will be clearly understood. Fulguration is the destruction of tissue by the playing of high frequency sparks upon the parts to be destroyed by superficial action, and is the least adaptable for the removal of tonsillar tissue. Desiccation is the effect of the unipolar current which brings about the evaporation of the fluid element of the cells, leaving the treated tissue in a dehydrated condition, such as a state of mummification. This is brought about by burying the needle in the tissue instead of playing high frequency sparks upon the surface of the tissue. Coagulation is the exact opposite of these methods and is accomplished by the heavy amperage and low voltage of the bipolar D'Arsonval current being converted into destructive heat within the tissue, by the resistance of the tissue, to the tremendously rapid moving current and is concentrated about the point of the electrode, coagulating the protoplasmic and cellular structure.

With these definitions clear in your minds, I will attempt to review the question of electro-

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coagulation of tonsils so as to present a general opinion of its relative merits. I will not discuss the standard methods of removing the tonsils, from the days of the buillotine, through the finger, the blunt and sharp instrument dissection, the wire snare, the LaForce, the Sluder, the suction and other well-known methods, but rather confine my remarks to opinions gathered from a survey of the literature and permit you to arrive at your own final conclusions as to its value as an adjunct to our surgical armamentarium in removing tonsils.

In the past ten years a great deal of interest has been manifested by the physician and general public in the electrosurgical removal of the tonsils, no doubt due to the great amount of general publicity given the subject through the medium of the health columns, lay periodicals and medical publications. A general wave of enthusiasm had been created by electrocoagulation. Men of the highest standing and of unquestioned reputation and ability have either heartily sanctioned, condemned, or are waiting further development of the procedure. The general public had been informed that there is no bleeding, no cutting, no hospitalization, and is without apparent difficulties or dangers. They have been given to understand that they have been now offered a safer, saner and surer method for the relief of throat conditions or general systemic conditions, resulting from infected tonsils. They have been informed that this method is entirely an office procedure from which the patient steps forth after treatment to resume his or her daily routine without interruption since no time is lost from his daily vocation.

To the oto-laryngologist interested in surgical diathermy there is no question but that electrocoagulation of tonsils is a valuable addition to his tonsillectomy armamentarium. In properly selected cases the competent efficient tonsil operator should be qualified to offer his patients their choice of surgical removal or removal of their tonsils by electrocoagulation. Advocates of this method point out that many patients who require tonsillectomy and who absolutely refuse surgical tonsillectomy, because of fear or other reasons, will readily submit and have their tonsils removed by diathermy when the method is fully explained.

Those who have faith in diathermy feel that electrocoagulation is unquestionably the method of choice in the aged and comparatively debilitated as the cardiac, the tuberculous, the nephritic, the hemophiliac, and where the question of a possible malignancy arises. It has been freely remarked that many physicians are doing themselves and patients an injustice by rushing enthusiastically into electrocoagulation without the proper experience or training to guide them. Those who favor this method feel that a most valuable addition to their armamentarium is being ruined by the attempted usage of untrained operators. There is no question that electrocoagulation is a valuable asset to their resources in dealing with the diseased tonsil, and the operators with this perfected technique, as well as electrosurgical for such cases as may be indicated, can render better service.

At present many believe that tonsils can be completely and efficiently removed by electrosurgery. The efforts of such pioneers as Wharer,[1] Wahering,[2] Gross,[3] Balmer,[4,5] Hollander[6,7] in the middle west and Skillern,[8] Silvers[9] and Dillenger[10] in the east have demonstrated that electrosurgery is a rational procedure in selected cases for tonsil extirpation.

In this paper I will present the opinions of men who have done a great deal of work on this subject and will try and point out to you some of the disadvantages of this method as well as the advantages. The general indications are far from conclusive, but on the basis of general reports certain indications appear quite definite. All of the advocates of electrocoagulation of tonsils feel that this method should not be attempted by those not thoroughly familiar with general surgical tonsillectomy. They feel that while surgical tonsillectomy is undoubtedly the procedure to be preferred and will continue to be the method of choice for the removal of tonsils in the majority of cases, electrocoagulation has its place as the best available substitute for surgery.

Silvers, in his classification of end results of electrocoagulation states: 1. That a complete tonsillectomy is now possible by electrosurgery. 2. As an adjunct to the incomplete orthodox surgical tonsillectomy this method is valuable. 3. Tags, cicatricial contraction and lymphoid tissue appearing a year after operation are finally and effectively destroyed. 4. A shock proof,

nearly bloodless tonsillectomy is possible when the skill in electrosurgery and a thorough knowledge of the anatomy of the throat is mastered. 5. Electrosurgery, being controllable from start to finish of the operation, permits a multi-stage technique to replace the more radical single stage operation.

Indications for Electrocoagulation.—After an intensive survey of the recent literature, the following generally accepted indications were given.

1. Post-operative tags.
2. Lymphoid remains or regenerated tonsil tissue.
3. Removal of tonsils in conditions complicated by
   a. hemophilia
   b. tuberculosis
   c. hypertension
   d. nephritis
   e. marked debility
   f. cardiac disturbances
   g. syphilis
4. In the aged and infirm.
5. In phobias.
6. Growths and malignancies.
7. Various fungus infections.
8. Lingual hypertrophies and varices.

Limitations and Contraindications.—Electrocoagulation as is advocated by physiotherapists is a tedious, time consuming, ultra conservative procedure. It requires judgment, technical skill, patience and meticulate care. The multi-stage method advocated is the gradual extirpation of the tonsil, destroying a portion at one time. Inasmuch as the method is employed where conservatism is of paramount importance any attempt to destroy the entire tonsil at one sitting or large portions of it defeats the very purpose for which this method is employed. This is dangerous, not feasible and very impracticable and cannot be used in treating children or highly nervous individuals.

Notwithstanding the enthusiasm of the above statements I will quote Lillie[11] from the 1932 report of the section on oto-laryngology and rhinology of the Mayo clinic, "there is in use, although the method is fortunately on the wane, a method of electrocoagulation of the tonsil. There seems to be no logical basis for the method. It is as dangerous as surgical removal and the discomfort is extended over a long period. It is supposed to be bloodless, but apparently it is not bloodless. In this section we have never observed a patient whose tonsils have been entirely removed by electrocoagulation. Removal of the remaining tags is more difficult and histologic study of the tags reveals much evidence of disease. This method is not used in the clinic."

Skillern remarks that while he regarded the use of coagulation as an entirely safe procedure when complications rendered the usual radical method contraindicated, yet the use of this destructive element is not without grave dangers, and requires as much skill and knowledge of the part, as would be required in the orthodox surgical procedure.

W. J. Yonkers[12] states that his results have been very unsatisfactory and is still in doubt as to whether there was any indication for this method of removal.

Shambaugh and Dougherty[13] have reported on their experience with electrocoagulation as it was investigated in the department of oto-laryngology, Rush Medical College. Since that report they have continued to follow up their cases and find no reason for altering their minds in respect to the conclusions there expressed. They state: "We are very much disappointed in this application for the removal of enlarged tonsils. The method is entirely too costly in loss of time to the patient. The discomfort to which the patient is subjected is much greater, especially when one considers the number of treatments necessary. They further state the method is not free from danger of secondary hemorrhage and when such occurs the friable condition of the treated area renders the control of bleeding more difficult. We have not yet accomplished complete removal of the faucial tonsils by electrocoagulation, although the treatments were carried over a number of months. No patients have presented themselves from the outside where the tonsil fossae were free from residue of lymphoid tissue."

Tyler[14] advises that while electrocoagulation plays a very important role in the armamentarium of every laryngologist, in his opinion, it in no way supplants the surgical removal of tonsils, and feels that it should be used only in cases which are poor surgical risks.

Author's Personal Observations.—During the past five years while performing more than 125

tonsillectomies by diathermy the following observations have been recorded as to the advantages and disadvantages of tonsillectomy by electrocoagulation.

1. It is a method par excellence in the destruction of tonsillar stumps and recurrent lymphoid tissue. These are the cases in which clean postoperative tonsillar fossae were observed.

2. The reaction produced by diathermy have at times been as severe as that of surgical enucleation.

3. No given number of treatments can be promised the patient. In my series the number of treatments have varied from 12 to 26.

4. All of my patients were able to return and continue with their usual routines. Also to partake of their usual meals.

5. Electrocoagulation is not a suitable method for children and nervous individuals. It is not recommended in these cases.

CONCLUSIONS

1. The consensus of general opinions throughout the country is that surgery will continue to be the method of choice for the removal of tonsils in the greater percentage of cases requiring tonsillectomy.

2. Since electrocoagulation of the tonsils is being used in special and selected cases, the oto-laryngologist should familiarize himself with the technique of its use, so that he will be equipped to use the method best suited to the condition at hand and should not be limited by prejudice, equipment or lack of knowledge.

3. In spite of the voluminous articles that have appeared on the subject, we are as yet without conclusive evidence as to the procedure to adapt. As in all disputed problems each interested oto-laryngologist will be forced to use his own judgment in deciding which procedure to follow. It is the test of time which really proves the worth of any accepted treatment and confines it to the cases which will actually be benefited.

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DISCUSSION

Dr. M. H. Cottle, Chicago: I thought that Dr. Galloway in his presentation this morning summed up the status of diathermy, etc., in connection with the treatment of carcinoma about the head and neck. I think Dr. Hollender set at peace the problem of ionization. Electrocoagulation of tonsils is not new. It was done in 1915 at St. Bartholomew's in England; it has been done at the Cook County Hospital since 1920. I have been trying to do it for thirteen or fourteen years and am just about completely convinced that I cannot see any true indication for the removal of tonsils by diathermy as contra-distinguished from surgery. Dr. Broadwell this morning presented a report of 118 cases of tonsillectomy in tuberculosis, done surgically. In hemophilia or high blood pressure or other conditions you have felt forced to do complete tonsillectomy in many of these cases and have done it surgically. As far as the removal of stumps or tags of tonsil is concerned, you can do it with diathermy or you can do it surgically. That it is an addition—yes, but that it is a substitute—absolutely no.

Dr. Louis Savitt, Chicago (closing): I have nothing further to add. I wish to thank Dr. Cottle for this very kind discussion.

THE SURGICAL MANAGEMENT OF OZENA

S. M. Morwitz, M. D., F. A. C. S.
CHICAGO

The term ozena is used loosely by a number of clinicians. But it represents a definite prescribed pathologic condition. There are two recognized clinical types of atrophic rhinitis: 1. primary atrophic rhinitis or rhinitis atrophi-

From the Department of Laryngology, Rhinology and Otology, University of Illinois College of Medicine, and the Research and Educational Hospital.

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cans fetida et crustosa which is on a metabolic or endocrine basis and 2. secondary atrophic rhinitis which is associated with chronic paranasal sinusitis. The primary type eventually leads to true ozena with its characteristic fetor, while the secondary form occasionally develops crusts and fetor of a mild nature. Ruskin[1], after an extensive research both with microscope and roentgen ray, prefers to consider ozena and atrophic rhinitis as two distinct entities and the names should not be confused. He concludes that ozena implies a symmetrical primary disease of the mucosa resulting from an obliterating endarteritis while atrophic rhinitis is a disease of the nasal fossae secondary to chronic suppurative nasal infection and characterized by lymphocytic infiltration of the mucosa with chronic inflammatory changes. The writer is in accord with this classification from the standpoint of pathogenesis but feels that for clarity the terms primary including ozena, and secondary better identify the atrophic nasal conditions.

Curiously, ozena is analagous to otosclerosis. They both affect young, healthy adults, especially the female; they both are circumscribed pathologic processes, of insidious onset, chronic and progressive, with practically no systemic complication; they both destroy the sensory function involved; they both make social outcasts of their victims, who in time become difficult psychogenic problems; and they both present etiologic and therapeutic stumbling blocks.

Since the exact cause of primary atrophic rhinitis is not known the principles underlying its treatment are as varied as the methods employed. Surgically, such discarded operations as curettement of the entire nasal chamber, removal of the turbinates, blockage and extirpation of the sphenopalatine ganglion, and periarterial sympathectomy on the large vessels of the neck indicate the etiologic factor considered in each method.

It is a clinical observation that ozena is seldom seen in a narrow nose but only in wide nasal chambers. The degree of involvement is in direct ratio to the degree in width of the nasal cavities. The wider the nose the worse the nasal condition. If, in a case of ozena, there is a nasal deflection on one side the atrophy and crusting will be found greatly reduced on that side. On the other hand, if the septal deviation should be corrected, atrophy and crusts become increased in the previously obstructed side.

Another common observation in ozena is the formation of crusts in surgically exposed, paranasal sinuses which were otherwise free of infection with only a thin mucosal covering. Thus, introduction of more air favors increased atrophy and crusting. Lautenschlager[2] proved that the secretions come from the nasal mucosa and not from the sinuses. Abnormal width of the nose tends to increase oxidation and evaporation of secretions which lie on the mucosa. The columnar epithelium becomes injured and replaced by stratified squamous. It is a clinical fact that if the nose is blocked by cotton or sponge for several days the nasal mucosa becomes less pale, crusts become softer and looser and the malodor less distinct.

The objective of surgical therapy in ozena is based on the physical considerations given, and involves a means of permanently narrowing the nasal chambers with minimum injury to intranasal structures. To that end various surgical procedures have been introduced with varying success.

In 1894 Sanger[3] attempted to solve the problem of narrowing the nasal cavities by the use of metal obturators within the nose. This method was soon discarded as annoying and impractical for prolonged use. Gersuny[4] in 1900 used paraffine and from then on began an era of research for suitable heteroplastic and autoplastic implants. J. C. Beck injected paraffine into the inferior turbinates in 1907. Weleminsky[5] implanted solid pieces of paraffine into the nasal septum. But it was soon found that paraffine had a tendency to spread in the tissues and annulled the purpose intended. Ekert Mobius[6] considered spongy beef bone efficient material. Krug[7] and later Pollock[8] stimulated the use of ivory implants first introduced by Flatan[9] in 1900. Steurer[10] advised bone from the tibia or rib cartilage. Muskat[11] experimented with fascia lata of the thigh. Other kinds of implants employed are celluloid, gutta percha and fat. The above implants are deposited in pockets beneath the mucosa of the septum, inferior turbinate, or floor. This operation became popular because it was simple. However, the disadvantages are that on account of the atrophic mucosa fistulae eventually form and the implanted substance becomes

extruded, or if fat is used it becomes resorbed in a short time.

In 1916 Lautenschlager [12] reported his operation whereby he narrowed the nasal cavity not by implanting foreign material in it but by transposing the lateral nasal wall on both sides towards the septum. He accomplishes this by entering the maxillary sinus from the canine fossa through the labio-gingival incision, breaking through the naso-antral wall anteriorly and at the base, and forcing it toward the septum. The antral mucosa is completely removed. The ethmoid is opened through the antrum and curetted, and the middle turbinate is pushed medially. All this is carefully done so as not to injure the nasal mucosa. Previous scarification of turbinates and septum helps produce adhesions between them when approximated. Firm packing in the antrum keeps the lateral wall in its new position. This operation is a rather formidable one with considerable postoperative reaction and therefore has not received popular approval. Since then Wittmaack[13], Hinsberg[14], Borries, and Halle have developed modified technics. Halle's[15] modification transposes the lateral wall through an endonasal incision.

Schoolman[16] in 1924 introduced Halle's technic and reported favorable results in a series of cases performed at the Illinois Eye and Ear Infirmary and the Mt. Sinai Hospital of Chicago. However, otolaryngologists in this country have been rather slow to accept radical surgical measures for the treatment of ozena. Halle's operation has recently been improved by Wachsberger who has made an extensive study of the ozena problem.

The method of Wachsberger[17] is as follows: Local anesthesia is generally used. The medial side of both turbinates and the parts of the septum opposite are scarified with a knife. An incision along and on the facial side of the pyriform crest, extending from the insertion of the inferior turbinate down to the nasal floor, is made and carried through the skin and periosteum (the same as in a Canfield-Sturman for radical antrum). This is followed by elevation of the periosteum over the facial wall for about one-half inch, and then by loosening of the periosteum at the height of the pyriform crest by scraping it with the edge of a chisel. This facilitates the undermining of the muco-periosteum along the nasoantral wall below the inferior turbinate and the floor of the nose. A medium-sized Killian speculum is then inserted into the wound, its branches protecting the soft parts of the cheek on one side and the mucoperiosteum on the nasal side, thus exposing the anterior and medial wall of the antrum. An incision parallel to the pyriform crest is made into the facial wall with a chisel, from the level of the insertion of the inferior turbinate down almost to the level of the nasal floor. The upper end of this incision is extended upward and medially until it severs the continuity of the pyriform crest. The lower end of this incision is extended medially at a right angle and severs the pyriform crest as near to the nasal floor as possible. Difficulty may be encountered here because of the great thickness and density of the bone, as is often found in ozena. Halle's saw which is ordinarily used in plastic operations on the nose, is the most suitable instrument for this. The bone is sawed from within outward.

The cutting of the nasoantral wall backward and along the nasal floor is next accomplished with the author's bone scissors or a chisel. To transpose the lateral wall a heavy, rigid, septal elevator is introduced into the antrum through the incision into the facial wall and firm pressure is exerted against the nasoantral wall forcing it medially as close as possible to the septum. It is essential that close approximation of the turbinates and septum be made so adhesions form between them. Firm packing of the antrum with vaseline tampons concludes the operation.

Wachsberger states the advantages of his method are as follows: The operation is done through the nose. It is done without any incision into the nasal mucosa thus preventing permanent openings into the antrum. His method is applicable and as successful in persons with antrums of normal size. Mobilization and transposition of the most anterior part of the lateral wall result in narrowing of the nasal cavity to a greater degree and make this method suitable for advanced cases. It is easier to perform technically, and the after treatment is simple.

As for postoperative complications, he had one patient in whom a chronic dacryocystitis developed which was cured by resection of the tear sac. Empyema of the antrum occurred in another case which was controlled by irrigation and drainage through the operative wound. He further states that disregarding the transient traumatic reaction following the operation the

objective resulting changes in the nose are: disappearance of the pallor and dryness of the mucosa and the crusts except for occasional soft scabs in the nasopharynx in a few less successful cases. He observed polyps develop in three cases shortly after operation. In one case recently seen, five years after his first attempt with his modification, the nose was as good now as it was after the operation. The disappearance of the fetor is a definite result, and since the malodor is the most annoying symptom to the patient he considers this fact alone makes the operation worth while.

At the Research and Educational Hospital of the University of Illinois the technic as outlined above has within a period of six months been performed seven times, bilaterally in two cases and unilaterally in three cases. Only one side was done at one sitting because our experience has been that quite a local reaction with great discomfort occurs and requires almost a week for its resolution. The thickness and density of the bony wall present a technical difficulty. We use the Halle saw and chisel to loosen this wall and care must be taken to avoid fractures as this bony wall is often brittle. In one case chiselling the nasoantral wall posteriorly caused severe hemorrhages. The bleeding vessel, apparently a branch of the sphenopalatine artery, could not be located. Besides tight packing two blood transfusions were required to control the hemorrhage. Empyema of the antrum which readily yielded to irrigations occurred in one case. As mentioned earlier the antrum on exposure soon fills with crusts which continue until the incision closes. In one case a portion of the nasoantral wall broke off anteriorly and was removed. However good narrowing was obtained by the occurrence of strong adhesions. A surgeon soon overcomes certain technical difficulties in this operation with experience and practice, and thereby minimizes postoperative reaction.

The postoperative reaction of the atrophic nasal tissue is startling. The inferior turbinate, especially, becomes enlarged, hyperplastic, and its mucosa assumes a pinkish hue. (Fig. 1, 2 & 3.) The fetor immediately disappears and if good intranasal narrowing is maintained crusting becomes a negligible factor. The after treatment requires little time and effort. An interesting observation is the freedom of nasal respiration in spite of the greatly reduced nasal chamber space. Two patients claimed they could distinguish certain odors. The patients take on new hope and with it a markedly improved psychologic state. The writer, after having experimented with a number of recognized medical and surgical types of therapy considers at present, the Wachsberger modification the most rational and practical form of therapy for physiological cures in cases of genuine ozena.

Fig 1. Mrs. M. Right side operated on three months ago. Left side not operated on. Note prominence of the right inferior turbinate and reduced nasal space. Left nasal space is wide.

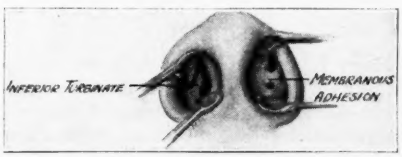

Fig. 2. Miss A. K. Right side operated on July 21, 1934. Left side operated on August 18, 1934. The hyperplastic inferior turbinate behind the membranous adhesion is visible through the upper opening.

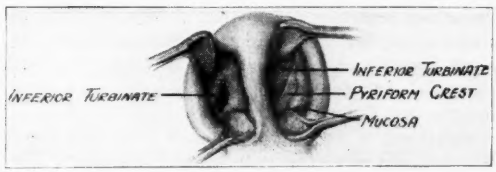

Fig. 3. Miss M. S. Right side operated on two months ago. Left side operated on two weeks ago. The pyriform crest is still exposed before covered by mucosa.

I wish to thank Prof. Lederer for his encouragement and interest and Dr. M. Gorin, resident in otolaryngology at the Illinois Research Hospital for his diligent co-operation in the operations and study of cases thus far undertaken in our series.

55 East Washington St.

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DISCUSSION

Dr. Harry L. Pollock, Chicago: In the brief period of time allotted Dr. Morwitz it is naturally impossible for him to discuss in detail all phases of ozena relating to etiology, pathology and treatment. He has, however, given a brief synopsis of some of the theories of etiology and pathology, to all of which I do not subscribe. But since nothing absolutely definite is known as to the etiology it becomes a matter of individual opinion, and one man's theory is as good as another's.

One fact regarding ozena which I believe is definite is that its incidence in America has markedly decreased in the past fifteen years and this is substantiated by reports of individual rhinologists as well as by those of large free clinics. That this is not due to economic circumstances is quite apparent, since fewer and fewer cases are seen in a great many charity institutions. The decrease in incidence is due, I feel, to two main factors; first, restricted immigration from southern and south-eastern Europe, countries wherein ozena is most prevalent and which have furnished the source of the majority of our cases; second, individuals affected with acute nasal inflammations have been educated as to the importance of early and proper therapy, thus avoiding in a great measure chronic sinusitis, and obviating to a great extent the chief exciting factor in those individuals who possess a hereditary predisposition to genuine ozena.

In an address before the New York Academy in November, 1933, I presented what appeared to me the most lucid explanation as to the etiology. Otto Fleischmann, in his presentation of extensive data based on macro- and micropathologico-anatomic studies of the bone and mucosa of genuine ozena, concluded that it is an inherited lack of development of the bones and mucosa of the nose which places the stigma of a predisposition on these patients, demonstrating that an inherited predisposition must be present before the exciting cause, such as a chronic sinus disease, scarlet fever, diphtheria or any other systemic infection could precipitate the clinical picture which we designate as ozena. Every advanced case has an abnormal patulency of the nasal chambers and as Dr. Morwitz states, the only permanent cure or alleviation of the symptoms can be brought about by the narrowing of the nasal passages through surgical interference. This may be accomplished by either of the two methods—1. bringing the lateral wall toward the septum or 2. ballooning out the septum by means of subperichondreal implants. With reference to Dr. Wachsberger's modification of the operation to bring the lateral wall toward the septum, I am inadequately equipped to discuss it since I have never employed the procedure in practice. I have, however, carried out the procedure on a few cadavers and in my opinion it appears to be the simplest of the radical operations and should tend to cause fewer complications, inasmuch as he fully protects the soft parts of the cheek and does not injure the mucosa of the antrum. It would seem that the ultimate results might be more satisfactory than those obtained in the original radical procedures. Dr. Morwitz has briefly mentioned the method of intranasal implantation of ivory. My eight years' personal experience with ivory implantation has been very extensive and I wish to emphasize that in only a small percentage of cases did the implant extrude itself and when this did occur, it did so shortly after the ivory was implanted. In only one case in my experience did a fistula result. The great majority of patients operated on by this method obtained a physiological cure and the remainder have been moderately benefited.

There is no question but that the surgical treatment of ozena is the proper one, as palliative measures are absolute failures. As to what surgical procedure be employed, this depends on the individual operator, but as in any undertaking, the procedure which accomplishes the desired results by the simplest means and with the least amount of danger is the method of choice.

In closing I want to add that while in New York I had the pleasure of examining several of Dr. Wachsberger's patients operated on by his method, and observed that the results were satisfactory inasmuch as the fetor had disappeared and there was practically no crusting.

Dr. S. M. Morwitz, Chicago (closing): I want to thank Dr. Pollock for his courtesy in discussing this paper so fully. These cases of ozena in young people, young girls particularly, who are quite conscious of the odor which they cannot appreciate themselves but are told of, tend to make the patient a social outcast, and anything that can be done to remove the odor at least will be of considerable value. This problem has been of great interest to many workers, and I think, according to the present literature and what has been done in ozena, that something has been accomplished. Dr. Pollock has stated that palliative measures have not produced the results we like. Implants have had some effect, but I feel that this type of operation which will more or less permanently reduce the lateral walls, is more effective, because we know we can reduce the space and eliminate the odor. This we know from experience, though we cannot explain it except from observation. The Wachsberger modified operation should be given more consideration in the treatment of genuine ozena.

IMPORTANCE AND LIMITATIONS OF ROENTGEN DIAGNOSIS OF PULMONARY LESIONS IN CHILDREN

JOHN F. CAREY, M.D.
JOLIET, ILL.

The roentgenologist belongs to one of the most highly specialized branches of medicine. His place in diagnosis is fully appreciated by both the medical man and the laity. Far too often, however, he is expected to make a definite diagnosis on an examination of a single film of the chest. His opinion, whether it is intended to be a diagnosis or not, is far too often adopted as final in lieu of proper consideration of clinical findings.

The idea that the roentgen ray is a final instrument of precision in the diagnosis of certain diseases is not wholly restricted to the laity. A busy practitioner might easily be inclined to accept an opinion rather than spend the necessary time on repeated physical examinations and careful analysis of history, clinical and laboratory findings.

It is not the purpose of this paper to attempt to enlighten the group on any new advances nor to add anything to the great amount of knowledge and literature already written. It is more with the idea of attempting to show how findings of the two specialties must be correlated in making an intelligent diagnosis and the pitfalls we may encounter if proper stress is not placed upon all available data.

The majority of us are engaged in private practice and lack the facilities of larger medical centers where pathological conferences and instructive staff meetings are an incentive to investigate pathological conditions more thoroughly.

Far too seldom are we able to confer with colleagues in allied specialties or to witness autopsies where we may see before our own eyes the conditions which will explain the symptoms and physical findings.

The lack of these facilities might be remedied somewhat by small groups meeting regularly and difficult cases brought under discussion with current medical subjects. Such has been the practice of our group and it is highly interesting to observe the regard shown for the interlocking ideas of the different specialties.

I speak of this in reference to what I may say later, on the need of a specialist to be somewhat familiar with allied specialties insofar as those conditions are related to his own branch. It requires an extensive hospital experience for the average physician to be able to interpret a roentgenogram. He should see each film after a thorough study of the patient and attempt to correlate his findings.

Whether the radiologist is dealing with general practitioners or specialists, it is desirable that he know the clinical aspects of the case. He may obtain them from the patient. However, in the case of the infant or young child it may be secured from the mother or if in a hospital, from the record, but best of all from the attending physician. In obscure cases the best procedure is to inform the radiologist on the general aspects of the case and important clinical observations. Then let them decide together on the type of radiologic examination which will be of the most value.

After this has been done a further consultation on the results with the shadowgram before them is necessary. The exchange of ideas will usually be of great value in arriving at a diagnosis.

The method of requiring the roentgenologist to sit before his shadow-box and render a diagnosis is wrong unless he has the cooperation of the clinician whose findings should be just as confirmatory to him as his opinion is to us.

It is the fact that the radiologist is a consultant that increases his responsibility in reporting his findings. The fact that he sees something on a plate that other physicians may or may not observe puts him in a rather insecure position. How easy it is to forget that his observations on the flat plate are only shadows, not real pathological changes, and his interpretations may be just as debatable as other findings. How often the diagnosis of tuberculosis has been made because of increased density in the hilus region with other facts of the patient not taken into consideration.

From the nature of the child and peculiarities of disease in children it naturally follows that the problems of the pediatrician are different from those of the internist. Rarely do we have ulcers or neoplasms in childhood. The chronic changes in lung tissue and results of atheromatous changes are not to be expected in the child. Nutritional diseases, congenital abnormalities and more acute changes in lung tissue and juve-

Read before Section on Radiology, Illinois State Medical Society, Rockford, May 22, 1935.

nile tuberculosis illustrate the problems of the child specialist.

I would like here to illustrate some of the more common conditions one is confronted with in children, especially as regards certain chest conditions. The idea of the examples is to show the confirmatory results obtained by close correlation of the pathologic condition present with all other available data. One of the most frequent problems of diagnosis comes in the question of negative diagnosis of tuberculosis in children.

There is a certain group of active, pale, underweight children with poor or finicky appetites who are a source of worry to the anxious mother. If they have frequent colds or have had a pneumonia or a persistent cough and perhaps run a low-grade temperature, they are almost invariably suspected of being tuberculous. They may even perspire at night as any restless child may and "night sweats" are almost always connected with tuberculosis by the laity.

The mother may take such a child to the roentgenologist before consulting the attending physician. To her his word may be final. If he is not familiar with the more or less normal markings in the chest he may place a worry on the family by a positive diagnosis and the stigma of such a diagnosis may result in serious complications to the child.

These children suspected of being tuberculous but clinically negative, demand a thorough knowledge of the usual findings in the shadowgram together with a knowledge of the structures or pathological processes which are responsible for the shadows. Not infrequently, far more is found clinically than can be demonstrated on the film.

The National Tuberculosis Association, in attempting to enumerate the findings in a normal chest came to the following conclusion—"the normal chest from a radiographic standpoint is subject to such wide limits as to be beyond possibility of exact description."

With this in mind, and absence of exact standards for a normal chest, one can readily realize how futile an attempt at a diagnosis would be without a knowledge of the history, laboratory and physical data.

McPhedran, and more recently, Bigler, studied a large group of children by means of serial roentgenograms and later, in many cases, at necropsy the lungs were minutely dissected with the film before the examiner.

The conclusions were: the hilus shadows are made up for the most part of the bronchi and of blood in the vessels. The pulsation of the blood vessels increased the width of the shadow cast. The size and shape of the hilar shadow is influenced not only by active infection but also by remains of previous infections. The variations may be wide but still be within normal limits.

As regards lymph nodes within the lungs it was found that presence of calcium was the only indication of the locality of the gland. Intrapulmonary non-tuberculous glandular enlargement sufficient to project was not seen although there were many specimens showing large succulent glands due to acute infection. Such glands did not produce shadows which could be differentiated from the main stem vessels and bronchi which cross and surround the glands and there is no reason to suppose they should do so in the living. Furthermore, although many roentgenograms have been made during and immediately after acute, often serious infections, in no case could be found evidence of glandular enlargement due to that infection i. e., calcium free.

When these lymph nodes are large they may cause a pressure atelectasis of the surrounding lung tissue and if there is an extension of the infection there may be consolidation, after this acute stage subsides; there may be resulting scarring. Such changes when they do occur in the upper lobe have a higher incidence in later respiratory infections.

The changes in the hilum occurring after measles, bronchopneumonia, pertussis and repeated infections of the respiratory tract may be confusing but a diagnosis of the shadows cast by these conditions will be in less doubt if one eliminates tuberculosis with repeated tuberculin reactions and consideration of the history, clinical and laboratory findings. Considerable care must be exercised when one considers the significance of a positive diagnosis of the presence of calcified glands. The rounded shadows of equal density occurring in the inner third of the lung field as well as those along the linear markings, are due to blood vessels running parallel to the axial ray and their density depends upon the axial distance of their course.

In making a positive diagnosis of the presence of tuberculous disease of the chest in children the x-ray is essential since 80-90% of the infections are aerogenous in origin. The most important

positive findings are calcification and the rather characteristic mediastinal or hilar shadows. More advanced pulmonary pathology is less questionable.

Calcification is important since most authors agree that it can be considered tuberculous in practically all cases. Rarely does it occur from other causes in children.

A study of the healing or progress of the disease explains the protean manifestations of tuberculous disease in childhood and the images cast by these changes will be much clearer.

When tubercle bacilli are inhaled they gain entrance into the air cells of the lung structure and a pathologic process is set up. This is the so-called primary focus. The disease may be arrested early and this area then becomes calcified. This area may show up later as a small dense shadow about 3 mm in diameter. It is located an appreciable distance from the hilus usually near the pleural surfaces, and moves in a vertical direction with respiration. It is thus differentiated from a hilus structure.

However, before healing of this primary focus has occurred, very often the organisms are carried back by the lymphatics to the hilum area. Glands pick up these organisms, become swollen and congested and may undergo caseation. Here calcification may occur and x-ray examination will demonstrate this, the most frequent type found in children. Unfortunately, the process may not be arrested completely, especially in the younger child. Invasion of the lung by continuity from the hilus produces the triangular shadow of which I will speak later. Here again the tuberculous change may be arrested with resorption, calcification and recovery.

At times around the primary focus or from infection of the hilus, extension to surrounding lung tissue occurs. This results in a conglomeration of tubercles which caseate and break down throwing infective material into the bronchi and bronchioles. This results in a fan-like infiltration of the lungs producing a tuberculous pneumonia. Or again, the infected material may break into small blood vessels to be borne to all parts of the body resulting in the miliary type of tuberculosis. Cavity formation such as seen in adults is seldom demonstrated on the roentgenogram. The type of shadow cast naturally depends upon the stage of invasion. Knowing the seriousness of the possibility of incomplete healing in childhood naturally makes one timid in making a positive diagnosis without nearly absolute findings.

The rather characteristic hilar shadow mentioned previously is perhaps the most diagnostic lesion from the x-ray standpoint. At least, according to Bigler's report, it was found most frequently. He described the contents of the area as: "hyperplastic caseated lymph nodes with fibrous capsules, fibrous pleuritis with adhesions to the surrounding structures such as spinal column, pericardium, mediastinum and wall of the chest; consolidation of the surrounding lung tissue due to extending infection and calcification or fibrosis of lymph nodes." The rather typical shadow cast by such changes is a triangular reflection with a base superimposed on the median shadow and the apex extending out into the lung field. The shadow is usually hazy and fairly regular in outline as if pointing toward a lobe. If healing takes place and calcium is deposited one sees the areas of calcification and strandlike shadows. If the lymph glands are involved around the trachea there may be an increase in the mediastinal shadow on that side which is represented by a bulging shadow with a fairly definite outline or by a straight one with a frizzy border. When present this is just as diagnostic as the rather characteristic triangular shadow.

Many of the conditions found in the adult chest have their origin in childhood. The type of shadow seen in a pathological chest of an adult may be better explained when one considers the origin of the disease in early life.

Anspach demonstrated this in his work on *atelectasis in relation to bronchiectasis*. His work is highly important, not only from the standpoint of diagnosis, but also as regards treatment. He concludes that "atelectasis precedes and plays a prominent and most constant role in the development of a common form of bronchiectasis of the lower lobe. Early drainage of the bronchi causing the collapse is essential if the development of the bronchiectasis is to be avoided."

Collapse in itself is highly interesting because it occurs probably a great deal more frequently than we were formerly led to believe. It is usually only by an x-ray examination of the chest we can make such a diagnosis.

The constant triangular shadow noted at the base of the lungs in these cases represents a

lower lobe in various stages of collapse. The diagnosis of foreign bodies causing atelectasis is simplified if the offending body is opaque. However, as happens so many times in children, the obstructing substance is often a plug of mucus and is non-opaque. The diagnosis then must rest on the more or less characteristic appearance of the collapse. The degree of collapse naturally affects the density and appearance of the shadow cast by the offending area.

Clinically, these cases of collapse have been diagnosed as a pneumonia because of the occasional rales, dullness and bronchophony over the area. The displacement of the heart toward the affected side is of the greatest confirmatory diagnostic value. Children perhaps are more prone to develop the condition because of the relative frequency of respiratory infections and in the case of the infant, the prone position and pliant thoracic wall naturally seem to be causative factors. This added to the tendency of the infant and young child to place objects immediately in the mouth and losing control of them thereby permitting them to slide down and be inhaled into a bronchus, explains well why we may expect to encounter the condition more frequently.

While recognizing thus the great diagnostic value of the roentgen ray we should be reminded that it is only an accessory aid and cannot take the place of the clinical history, symptoms, physical findings and repeated tuberculin tests. These when negative in the absence of an overwhelming infection, are most important in ruling out a diagnosis of tuberculosis. In other words, the clinician who undertakes to make his diagnosis purely as a result of x-ray films, no matter how clear they may be or how good he may be at interpreting them, is destined to meet with disaster sooner or later, except in certain well defined conditions.

It must be remembered that like any diagnostic method its value will be measured by the technical skill of the physician in the making of the film no less than his ability to interpret them. The film must be clear and its markings well defined in order that the normal shadows may be distinguished from the pathological. The interpretation of hazy or otherwise imperfect films has as little justification as a physical examination of the lungs without disrobing the patient.

Skill in the interpretation presupposes not only a familiarity with roentgent shadows but also a working knowledge of the clinical and pathological features of the disease. Unless such knowledge is at the disposal of the examiner he will not be in a position to profit fully from his study of the film, nor will he be able to express in appropriate language the clinical or pathological type of the disease. It is hardly necessary to point out that only a physician is possessed of the knowledge which is a necessary prerequisite for an intelligent interpretation. It is an affront to the clinician to offer him, as is sometimes done, the opinion of a non-medical technician in any case where there is a question of diagnosis. The roentgen diagnosis inspires the mind of the clinician commensurate with the medical knowledge of the roentgenologist.

The special examples I have quoted represent the type of work accomplished in a large institution treating children exclusively. The individual work done on the one hand by a radiologist and on the other hand by a clinician, represents to me the highly satisfactory results accomplished by a correlation of laboratory and clinical findings. In addition, they represent the most frequent problems which have confronted me in chest conditions in children. I have purposely omitted conditions with which I am less familiar or in which there is still an element of controversy as to their relative significance.

In conclusion, the x-ray examination of the chest is almost indispensable to the diagnosis and understanding of pulmonary pathology.

The roentgenologist is a consultant and as such should be advised as to the clinical aspects of the case. The opinion he renders should be based upon proper consideration of these facts.

The average clinician cannot help but be impressed with the occasional absolute findings of the x-ray and the confirmatory or non-confirmatory value of the roentgenogram.

Repeated negative tuberculin tests is the best method in ruling out tuberculosis.

Prognosis and method of treatment is often dependent upon the opinion and advice of the roentgenologist.

Adult pathology in the chest may be explained better in many instances when a better understanding of the progress of the disease from early life is kept in mind.

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DISCUSSION

Dr. John A. Bigler, Highland Park; I think the collaboration of which Dr. Carey spoke between the pediatrician and the radiologist is quite essential to the intelligent understanding and diagnosis of pulmonary disease. The cases to which I am going to refer deal entirely with tuberculosis. The points we take into consideration are first the family history of contact with the tuberculous individual, usually a member of the family, but frequently it may the nurse, maid, visitors, etc. Second is the clinical history and also physical examination, both of which are frequently negative. The third is the laboratory examination involving mostly a tuberculin test. We place a great deal of reliance on a positive or negative test. Fourth is the x-ray examination. The x-ray is dependent on the first three, and also in the interpretation of the films the difference in the pathology of childhood tuberculosis and adult tuberculosis must be taken into consideration. In childhood tuberculosis there is involvement of both pulmonary tissue and lymphatic tissues.

Craig D. Butler (Oak Park): I shall confine my remarks to the newborn, inasmuch as the essayist and the first discussant have well covered the subject of chest pathology in older children. The neonatal chest conditions demanding roentgenologic investigation are those which give dullness in the normally resonant areas of the chest, e.g., atelectasis, widened mediastinal dullness due to large thymus or masses in the mediastinum, congenital heart dilatation, and fetal or neonatal pneumonias; less commonly lung cysts and diaphragmatic hernia.

Roentograms illustrative of these conditions were shown on lantern slides.

INTANGIBLES IN DIAGNOSIS

DON C. SUTTON, M.D.
CHICAGO

Our attendance at medical meetings is mainly for the purpose of learning from the experiences of our fellows, partly through the hearing and discussion of their papers, and, perhaps more, through the friendly intercourse between times. There is nothing that stays the dangers of Chauvinism in the individual physician so much as regular attendance at meetings of the county, state, national and special medical societies.

As practitioners of medicine our most important duties lie in direct contact with the individual patient. Exhaustive studies have been made of the psychological side of the patient, while but passing attention has been given to the psychology of the patient himself.

I desire to call your attention to certain facts of psychology as they affect the physician in relation to the diagnosis and treatment of disease. As there is considerable difference between the psychological basis of the diagnostician and that of the therapeutist, it becomes quite important that the physician who practices both diagnosis and treatment of disease, as practically all of us do, should be aware of these differences.

The diagnosis of disease requires the reasoning of the mathematician, the cold gathering and weighing of facts, with no sympathetic emotion as to the gravity or unkindliness of the diagnosis as it affects the patient or his friends, or even yourself. A necessary preliminary to diagnosis is the assembly of the data upon which it is ultimately based. The value of these facts must of necessity depend upon the care and thoroughness with which the examination is made. This does not mean, as often appears to be the fashion today, the less diligent method of depending largely, if not entirely, upon reports from the laboratory. In almost all cases a history, carefully taken by yourself, and a thorough and complete examination will yield the essential elements for a diagnosis. If not, you will at least know what additional information is needed. Unfortunately, the great majority of errors in diagnosis are due to failure to make a complete examination; ir other words, incompleteness of history-taking or physical examination is the result of pure laziness.

Having completed the examination the ultimate diagnosis depends upon, first, the judgment of the physician (that rather rare birthright so often mistakenly called ordinary horse sense); second, upon the knowledge of the doctor; and, finally, upon his emotional reactions.

Judgment: May be defined as the faculty of arriving at a correct conclusion by logical reasoning. Unfortunately, the teaching of logic is becoming more rare, with the result that few know its rules and pitfalls. Every physician should read carefully at least a primer in logic; it may save some embarrassing situations at a later time. Judgment is the most important element in the practice of medicine and is not of necessity an accompaniment of learning. Some of the rarest evidences of judgment may be seen in relatively unlearned individuals, and may be

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conspicuous by their absence in the most learned. The man of good judgment rarely errs in diagnosis. Oddy enough, there are times when good judgment is upon the side of neglect in acquiring the data necessary for an absolutely accurate diagnosis; for example, it may be better not to expose the patient to the ordeal of being moved in order to make some special examination desired. A coronary thrombosis may be better diagnosed clinically, than to move the patient for the purpose of making an electrocardiogram. Another instance might be the desirability of x-ray for accurate localization of a lesion; sudden death may occur when a patient with a fractured cervical vertebra is incautiously moved; and one of the worst offences is the danger of inducing a circulatory collapse in a case of pneumonia in the effort to localize the lesion definitely, even when a portable x-ray machine is used.

There are frequent occasions when a complete or even a correct diagnosis may cost too much.

The same need for judgment is always present in matters of treatment. The most glaring illustration is the operative treatment of conditions which are known to be beyond the possibility of either relief or cure. There is also the frequent tendency to treat a patient because something must be done; this is of course at times permissible, but never to the extent of instituting procedures which may contain an element of danger.

Knowledge: Obviously the value of the examination and the judgment is immeasurably enhanced by the learning of the physician. Too many excellent students and internes enter practice with the apparent idea that they have completed their learning, and that the remainder of their lives is to be devoted to its application. Dr. Frank Billings, when past 70 years of age, in answer to an inquiry by an attorney as to his business, stated that he had been a student of medicine for the past fifty years. Medical school and interneship are at best merely the foundation upon which a lifetime of learning must be built. If one does not continue to learn, unfortunately the unlearning process immediately becomes activated.

Learning may be acquired by the reading of books and periodicals, a most valuable use of one's leisure time. In most communities nowadays, excellent libraries may be built up in the hospital, thus distributing the cost among the members of the profession. But in addition there should be a fairly active library in either the office or the home. However, while books can hardly be excelled as a method of learning, the so-called bookworm is likely to be an impractical fellow.

An additional and a most excellent method of learning is by the careful study of patients seen in practice. To be of value, records must be kept carefully, and must be supplemented by a correlation of the pertinent literature; also, consultation with our confreres brings additional value to the study of cases. The value of an experience based upon seeing a great number of cases is so great that the opportunity to see patients regardless of the circumstances should never be neglected.

Closely related to the study of the patient is the opportunity afforded for the learning of further facts by attending operative procedures and autopsies. The requirements of hospital boards have greatly increased the numbers of autopsies performed, and every physician should urge, at every opportunity, the performance of such examination in every fatal case. Further, attendance at clinical and pathological conferences greatly increases the opportunity for further knowledge by seeing and learning of the experiences of others.

And finally, a most neglected but extremely valuable method of learning is that of investigation. Ordinarily, investigation is thought of as requiring laboratory facilities with a large number of patients at one's disposal. Corrigan made his most complete study of aortic insufficiency by the observation of five cases, and at no time did he have more than five hospital beds at his disposal. The general practitioner enjoys a most enviable position with regard to clinical investigation. He has a most intimate contact with his patients, knows their families, their environment and their past histories. He has the only opportunity for the extensive study of the very beginnings of disease, and not infrequently the opportunity for the discovery of new ones. The epidemic of encephalitis at St. Louis in 1933 was preceded in 1932 by one at Paris, Ill. Further studies have revealed that isolated cases of this disease occurred in some twenty states over a period of several years before the outbreaks at Paris and St. Louis. How many general practitioners overlooked the opportunity of describ-

ing a new disease? A most valuable contribution to the study of milk sickness was made a few years ago at the Joliet meeting by Dr. Walsh of Ottawa. Dr. Lloyd Arnold tells me that Dr. R. O. Stites of Industry, Ill., has not only studied a large number of cases of bacillus abortus infections, but that he will soon make a valuable contribution as to its mode of transmission.

And we must not forget that the epoch-making studies upon heart disease made by Sir James MacKenzie were made while he carried on a busy practice in an industrial community.

The physician who neglects his learning after the beginning of practice is not only dishonest to himself but is, to say the least, misrepresenting himself to his clientele.

The emotional factor of diagnosis or treatment is much greater than we ordinarily think. The most common effect of emotion is the distortion of judgment when those most intimate or dear to us are ill. How often does a father fail to recognize an early tuberculosis in a daughter, a husband an early cancer in his wife, or a physician an angina pectoris in his best friend? Such misfortunes just cannot overtake those he loves. A physician who has suffered an almost fatal attack of myocardial infarction may refuse subconsciously to recognize either a similar attack or even attacks of angina pectoris when such are seen in his practice.

A most peculiar emotional state that is seen frequently is the fear of telling a patient that there is nothing wrong when some serious disease has been considered, or when the patient is afraid he may have some disease. Whether this is due entirely to the fear that further progress may prove the patient to be correct in his suspicions, or to the fear that his own diagnostic ability may be questioned by a confrere I have been unable to determine.

In the French army during the world war it was found that some 60 per cent. of cases returned from the front as tuberculosis had been wrongly diagnosed. Such over-cautiousness or fear often results in similar mistakes in sending private patients to sanataria. Heart disease is very often incorrectly diagnosed because there are yet many physicians who believe the presence of a systolic murmur to be diagnostic of valvular disease. Those of course make the error through ignorance. But I have also heard the statement—"I did not think the patient had heart disease, but was afraid someone else would hear the murmur and make a diagnosis of heart disease."

The patient who has a diagnosis of heart disease does not always realize that only a very small percentage of such cases succumb to sudden death. The girl is advised not to marry or bear children, the boy is restricted in his occupation, the adult is required to retire or readjust his work—all serious changes when necessary, and tragedies when done because of wrong advice by the physician. The incorrect diagnosis of tuberculosis carries almost the same penalty for the individual.

When a patient is not doing well, both internist and surgeon are likely to look elsewhere for the trouble, look for a new disease that relieves them from responsibility for the patient's failure to respond to treatment. The surgeon, after an abdominal operation, looks for pneumonia, or as one did recently, makes repeated blood cultures for a bacterial endocarditis. In the meantime no attention is being paid to the obvious complication at the site of operation. It is more safe to consider all changes in the course of a disease as due to that disease, than to violate the first principle of diagnosis, namely, that a patient rarely has two diseases at the same time.

Both physician and surgeon are often guilty of advising operation simply because there is a condition present that is not normal, although doing the patient no apparent harm. As a consequence, an accidentally found gallstone is removed; the normal residues in the genital tract after childbearing are repaired. A long list could be retailed. All operative procedures may have complications or even death as a possible result. Are these occasional bad results too great a price to pay for such interference?

Although the emotions must be safely stored in the ice-box when diagnosis is being made, a slight leaven of them during the course of treatment is often more important than the actual therapy itself. Therefore the importance of what the public calls personality in the physician, the confidence, the calmness, and the assurance he passes on to the patient. If more of us had it to a high degree there would be but little of the public's need for the charlatan. Such quality of personality eases the mental reactions of the fatal or prolonged chronic illness, and most important of all, prevents or makes less permanent

the psychologic dysfunctions that follow any illness.

The broad boundaries of medicine make it for us—

A science in the study of disease;
An art in its execution;
And withal, a noble charity in its practice.

30 N. Michigan Ave.

VITAL STATISTICS AS AN INDICATOR OF ACCURACY OF DIAGNOSIS

G. HOWARD GOWEN, M.D.
CHICAGO

In 1911, several thousand queries were sent to physicians by the United States Census Bureau in regard to the manner of filling out certain specified death certificates. Of those physicians replying, 57.0% made changes in the cause of death. In 1929, a similar inquiry resulted in a 47.2% change in the cause of death. From 1911 to 1929, therefore, it would seem that there was a 9.8% improvement in the accuracy of death certification. With the advances in medical science resulting in better instruction and improved facilities for diagnosis, such an improvement in the accuracy of determining the cause of death would be expected. Unfortunately, the apparent increase in accuracy in certifying the cause of death as is seemingly indicated by the above queries is in general not true. This is evidenced by the following figures taken from the mortality statistics of the U. S. Bureau of Census for 1914 and 1929 for the registration area:

	1914	1929
Total deaths all causes....	*898,059*	*1,386,363*
Total ill-defined causes of death	7,964—0.89%	24 258—1.75%
Sudden death	*513*	*2,391*
Ill-defined	3 593	5,671
Not specified or unknown	3,858	16,196

During this fifteen year period the increase in inaccuracy of determining the cause of death has been 304.6%. The largest inaccuracy is seen to be in regard to the unspecified or unknown causes. This increase can not be explained on the basis of increase in population since, during this same interval, the population of the United States in the registration area increased by only 76.2%.

In order to more intimately study this matter, three causes of death were chosen where poor definition is evident in the cause itself or where non-specification could readily play a part. The causes of death selected were peritonitis, pneumonia and sudden death. A comparison was made in these cases for the years 1914 and 1929. Inasmuch as there were only 25 states in the Registration Area in 1914, these same states were used for comparison in 1929. The results are seen in tables 1, 2 and 3.

In Table 1 it is seen that fifteen out of the twenty-five registration states or 60% show a decrease in the number of times unspecified peritonitis is given as the cause of death. This would indicate that in these states there was an increased accuracy in determining the exciting cause of the peritonitis. The average percentage increase in accuracy of diagnosis in these fifteen states would be 40.8%. This is offset by a 40.6% decrease in accuracy on the part of the remaining ten states. Considering the entire twenty-five states from 1914 to 1929, there has been an increased accuracy of 0.43% in the diagnosis of the determining cause of peritonitis.

In Table 2 it is seen that five out of twenty-five states, or 20%, show a decrease in the number of unspecified cases of sudden death. The average increase in accuracy in these five states was 35.7%. Eighteen states, or 72%, show an increase in the number of cases of unspecified sudden death. The average increase in inaccuracy in these eighteen states was 191.1%. Two states, or 8%, showed no change. In considering the total increase in number of cases of unspecified sudden death from 1914 to 1929, the decrease in accuracy of diagnosis would be 366.0%, and the total increase in unspecified cases of sudden death would be 1878.

While the foregoing tables show considerable inaccuracy in determining the cause of death, Table 3 indicates that in pneumonia there has been a definite improvement. Twenty-four states, or 96%, show a decrease in the number of unspecified cases and a resulting average increase in accuracy of diagnosis of 19.4%. Only one state, or 4%, showed a decrease in accuracy and this was only 0.4%. In 1914 the average per cent of unspecified cases of pneumonia was

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From the Department of Bacteriology and Preventive Medicine, University of Illinois, College of Medicine, the Research Laboratories of the Illinois State Department of Public Health and the Chicago Medical School.

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22.5%. In 1929 this was only 3.8% or an average increase in accuracy of 18.7%.

In comparing Illinois with the above mentioned registration states in regard to the same causes of death, it is necessary to employ the period 1918 to 1929 inasmuch as Illinois was not admitted as a registration state until 1918. The statistics for Illinois are given in table 4.

TABLE 4

ILLINOIS

	1918	1929	Difference	Per cent. increase or decrease	Per cent. of accuracy
Unspecified peritonitis.	185	91	— 94	— 50.8	+ 50.8
Total ill—defined.....	508	248	—260	— 51.1	+ 51.1
Sudden death.....	3	22	+ 19	+633.3	—633.3
Ill-Defined	365	47	—318	— 87.1	+ 87.1
Unspecified or unknown	140	179	+ 39	+ 27.8	— 27.8
Pneumonia:					
Total 14455	6090				
Undefined 2789	51				
Per cent. of in accuracy	19.2	0.8			
Per cent increase or decrease in accuracy.....					+ 18.4

It is seen that in Illinois there has been an 18.4% increase in accuracy in determining the type of pneumonia causing death which is almost equivalent to the 18.7% average noted in the twenty-five registration states studied. This increase is less than noted in twelve of these states but is greater than the remaining thirteen. In 1929 there was only a 0.8% inaccuracy which is less than all the states studied excepting Massachusetts which showed a 1929 inaccuracy of only .04%. Unspecified peritonitis shows a decrease of 50.8% and an increase accuracy of diagnosis of 50.8% which is considerably higher than the average increase of 0.43% noted in Table 1. Only five of the 25 states exceeded Illinois in increased accuracy of determining the exciting cause of peritonitis causing death. Sudden death in Illinois shows an increase of 633.3% in the number of cases reported and a decrease in accuracy of 633.3% which is considerably higher than the average of 366.0% noted in Table 2. Only two of the twenty-five states studied showed a greater percentage increase in the number of cases in which unspecified sudden death was given as the cause of death. In total undefined diseases causing death there is a decrease in Illinois instead of an increase as noted in the total registration area. In non-specified or unknown causes of death, Illinois follows the general trend and shows an increase.

SUMMARY

In a study made of the existing twenty-five registration states in 1914 up to and including 1929 the following comparative facts were elicted in regard to certain selected unspecified causes of death for the year 1914 and the year 1929:

1. There was, during this fifteen year period, a slight decrease in cases of unspecified peritonitis amounting to eight cases or 0.43% and therefore an increased accuracy of diagnosis of 0.43%.

2. During the same period there was an increase in cases of sudden death amounting to 1878 or 366.0%, and a resultant decrease in accuracy of diagnosis of 366.0%.

3. During the same period there was a decrease in the number of cases of unspecified pneumonia and an average increase in accuracy of diagnosis of 18.7%.

In a similar statistical survey made for Illinois but only for the period 1918 to 1929 the following facts were noted:

1. There was a decrease in the number of cases of undefined pneumonia, unspecified peritonitis, and ill-defined causes of death. There was, however, an increase in cases of sudden death and unspecified or unknown causes of death.

2. There was an increased accuracy in the diagnosis of pneumonia of 18.4%, an increased accuracy in determining the exciting cause of peritonitis of 50.8% and an increased accuracy in regard to ill-defined causes of death of 87.1%

3. There was a decreased accuracy in determining the cause of sudden death of 633.3% and a decreased accuracy in regard to unspecified or unknown causes of death of 27.8%.

In 1929 there were 24,258 deaths in the registration area of the United States in which, due to poor definition or lack of definition, it can be concluded that the cause of death was questionable or unknown. This amounts to a 304.6% increase since 1914 which is not comparable with the 76.2% increase in population and is not what would be expected considering the increased facilities for more accurate medical diagnosis.

Although there is evidence of improvement in the accuracy of determining causes of death,

nevertheless, there is still much to be hoped for in this regard.

TABLE 1

PERITONITIS (UNSPECIFIED)

	1914	1929	Difference	Per Cent Increase or Decrease	Per Cent of Accuracy
Kentucky	138	40	—98	—71.0	+71.0
Montana	27	8	—19	—70.4	+70.4
Kansas	76	27	—49	—64.4	+64.4
Maine	26	10	—16	—61.4	+61.4
Virginia	74	31	—43	—58.1	+58.1
Missouri	99	56	—43	—43.4	+43.4
Pennsylvania	277	163	—114	—41.1	+41.1
Vermont	22	13	—9	—40.9	+40.9
New Hampshire	13	8	—5	—38.4	+38.4
Massachusetts	72	49	—23	—31.9	+31.9
Michigan	153	108	—45	—29.4	+29.4
Indiana	74	54	—20	—27.0	+27.0
Connecticut	37	30	—7	—16.2	+16.2
Ohio	139	120	—19	—13.7	+13.7
Wisconsin	36	34	—2	—5.5	+5.5
New York	176	192	+16	+9.0	—9.0
Rhode Island	10	11	+1	+10.0	—10.0
New Jersey	43	52	+9	+20.9	—20.9
Utah	4	5	+1	+25.0	—25.0
Minnesota	24	30	+6	+25.0	—25.0
Washington	10	13	+3	+30.0	—30.0
California	59	79	+20	+33.8	—33.8
Maryland	18	25	+7	+38.8	—38.8
Colorado	10	20	+10	+100.0	—100.0
North Carolina	22	47	+25	+113.6	—113.6
Total	1848	1840	—8	—0.43	+0.43

TABLE 2

SUDDEN DEATH (UNSPECIFIED)

	1914	1929	Difference	Per Cent Increase or Decrease	Per Cent of Accuracy
Colorado	1	1	0	0.0	No change
Maryland	15	15	0	0.0	No change
Montana	9	2	—7	—77.7	+77.7
Massachusetts	20	13	—7	—35.0	+35.0
Pennsylvania	118	80	—38	—32.2	+32.2
Missouri	34	25	—9	—27.6	+27.6
Kentucky	32	30	—2	—6.2	+6.2
Connecticut	13	14	+1	+7.6	—7.6
Ohio	31	34	+3	+9.6	—9.6
Wisconsin	11	13	+2	+18.1	—18.1
New Hampshire	5	6	+1	+20.0	—20.0
New Jersey	4	5	+1	+25.0	—25.0
Kansas	17	23	+6	+35.2	—35.2
Minnesota	17	24	+7	+41.1	—41.1
Rhode Island	5	9	+4	+80.0	—80.0
Michigan	14	29	+15	+107.1	—107.1
Maine	21	44	+23	+109.5	—109.5
New York	6	14	+8	+133.3	—133.3
Virginia	78	195	+117	+150.0	—150.0
Utah	4	14	+10	+250.0	—250.0
Vermont	0	3	+3	+300.0	—300.0
Indiana	0	3	+3	+300.0	—300.0
California	1	4	+3	+300.0	—300.0
Washington	3	23	+20	+666.6	—666.6
North Carolina	31	306	+275	+887.0	—887.0
Total	513	2391	+1878	+366.0	—366.0

TABLE 3

PNEUMONIA

	1914 Total	1914 Undefined	1914 Per cent. of inaccuracy	1929 Total	1929 Undefined	1929 Per cent. of inaccuracy	Per cent. increase or decrease in accuracy
Vermont	407	292	71.7	368	17	4.6	+67.1
Kansas	1197	588	49.1	972	20	2.0	+47.1
Virginia	2278	952	41.7	2340	187	7.9	+33.8
Michigan	2751	993	36.0	4235	149	3.5	+32.5
Maine	1119	395	35.2	790	47	5.9	+29.3
Rhode Island	846	249	29.4	888	18	2.0	+27.4
New Hampshire	561	176	31.3	460	24	5.2	+26.1
Connecticut	1856	472	25.0	1458	27	1.8	+23.2
Pennsylvania	12038	2809	23.3	10109	233	2.3	+21.0
Wisconsin	2336	575	24.6	2170	80	3.6	+21.0
New Jersey	4329	971	22.4	4045	72	1.7	+20.7
Kentucky	2549	882	34.5	2456	357	14.5	+20.0
Montana	464	130	21.5	431	26	6.0	+15.5
North Carolina	709	178	25.1	2706	285	10.5	+14.6
California	2580	445	17.2	4219	111	2.6	+14.6
Minnesota	2155	299	13.8	1906	40	2.0	+11.8
New York	15406	1950	12.6	14055	179	1.2	+11.4
Indiana	2919	351	12.0	2752	99	3.6	+ 8.4
Massachusetts	5610	424	7.5	4777	19	0.4	+ 7.1
Maryland	2122	142	6.6	2125	28	1.3	+ 5.3
Utah	467	48	10.2	398	23	5.8	+ 4.4
Missouri	3674	147	4.0	3723	62	1.6	+ 2.4
Washington	713	20	2.7	964	19	1.9	+ 0.8
Ohio	5432	228	1.8	5900	60	1.1	+ 0.7
Colorado	1032	38	3.6	950	38	4.0	— 0.4
Average			22.5			3.8	+18.7

DISCUSSION

Dr. John J. McShane, Springfield: In discussing Dr. Gowen's paper I wish to state that I have asked Dr. Woodruff, who is our medical assistant in the Division of Vital Statistics, to discuss this paper at length because of the fact that he classifies all death certificates and he is therefore in a better position to discuss Dr. Gowen's paper than I am.

Relative to the persons whose deaths are classified as "unspecified sudden deaths," I believe many of these deaths so classified are coroner's cases, and since the statutes give the coroner the right to sign death certificates, the cause of death given by him must be accepted by this Department. Then again, in many instances, on death certificates signed by coroners, it will be noted that the cause of death given on the coroner's certificate will be myocarditis or cerebral hemorrhage, and on further investigation you will note that there was no autopsy on the deceased in most instances.

If I remember correctly if the cause of death is given as myocarditis and also a statement that the person had nephritis, this death is charged to nephritis, and where heart conditions are noted on the death certificate along with the statement that the person had nephritis, all these heart conditions are charged to nephritis and that is why we have so many cases of chronic nephritis.

Recently I read a paper by Dr. Swartout in an Eastern Medical Journal. This paper referred to work of Dr. Swartout for his doctors' thesis at Yale. This study

was very interesting as he compared the accuracy of diagnosis of cases in the New Haven City Hospital as against Cabot's study as to the accuracy of diagnosis in the Massachusetts General Hospital. The study of Cabot was made prior to 1912 and the study of the New Haven cases were made for the same period of time, however, this study included the years 1922 to 1933, inclusive, and fortunately it is for the same number of years but not for the same years. I am including a table taken from the *New England Medical Journal,* giving statistics on thirteen diseases and the percentages of correct diagnosis in each case.

	Massachusetts General Hospital	New Haven Hospital
Pulmonary Tuberculosis	59	92
Tubercular Meningitis	72	94
Cancer of Esophagus	80	90
Cancer of the Stomach	72	85
Cancer of the Colon	74	83
Brain Tumor, unspecified	73	90
Diabetes Mellitus	95	100
Simple Meningitis	64	96
Cerebral Hemorrhage	67	92
Acute Endocarditis	39	82
Broncho-pneumonia	33	87
Lobar-pneumonia	74	99
Cirrhosis of the Liver, unspecified	39	73

As Dr. Swartout states in his paper, with x-ray and with the better methods of diagnosis, both in the laboratory and clinically, this might account for the different percentages as to the correctness of diagnosis.

I thought this paper was of interest because we have tabulations from two hospitals in the East, staffed by very capable men, and still there is a difference as to the correctness of diagnosis.

R. H. Woodruff, Springfield: Our statistical data of today is not of much value as an indicator or barometer of accuracy in diagnosis by physicians, for the reason that such data is based upon the opinion of the physician, rather than upon detailed laboratory methods and autopsy findings. While the opinion of physicians who have access to all the modern methods of diagnosis, may in a large percentage of cases, be correct as to the cause of death, this is offset by a much larger number who are forced to rely entirely upon the clinical picture, and whose diagnosis therefore may be entirely wrong.

While advances in medical science and improved methods of diagnosis may have resulted in more accurate statements as to death causes, they should not be over-estimated as a factor in improving the accuracy of our mortality statistics.

The inaccuracy of our present statistics is based, not so much upon the physician's lack of diagnostic ability, as it is upon his brevity and lack of care, and the things he omits, when completing the certificate of death. No matter how much the physician may have determined about the condition that resulted in the death, such knowledge is of no value from a statistical standpoint unless he incorporates sufficient of this information in the death certificate to allow of accurate assignment of the death cause.

Many death causes are assigned, and the death classified, upon the basis of a *probability* expressed by the physician, and if this were not true the percentage of inaccuracy of our data would be much higher than it is at present.

Our statistics have become more accurate and more dependable for the reason that continued pressure has been made upon the physician over a period of years for more detailed statements concerning the factors entering into the cause of death. Briefly, the percentage of inaccuracy of statistics shown by any state is merely the sum total of those physicians, who being asked for more detailed information concerning the death, either have no opinion to offer, or refuse to answer the query sent to them.

Both the Census Bureau and the individual states should be given credit for lessening the inaccuracy of ascribed death causes, a decrease which they have brought about by pointing out to the physician himself the necessity for more care and detail in making out the death certificate. The effect of this continued effort is now being shown by a decrease in inaccurate and incomplete certificates, such improvement being true of the entire registration area, though of course the improvement is not uniform in all of the states. The individual, checking death certificates for the purpose of assigning death causes, should necessarily be a physician of experience, in order that the death may be classified, when possible, from the information given, or when necessary, intelligent queries may be sent out requesting further information.

Dr. Gowen has used the fifteen-year period between 1914 and 1929, and has cited figures and percentages based upon statistics for those years. Unfortunately the accuracy of data for this interval of years is influenced by the fact that the Manual of the International List of Death Causes was revised in 1920, and numerous changes were made in the classification assignments, as a result of which, classification errors were numerous and the data therefore questionable as to accuracy.

Considering the accuracy of statistics as far as Illinois is concerned, I wish to call your attention to the annual report of the Bureau of Census for the years 1928, 1929 and 1930. These reports are prefaced by the following important statement:

> "It is obvious that the cause of death cannot be classified correctly unless it has been stated correctly. It is not stated correctly when one or two of several factors are not given in the physician's report. Again, it is not stated accurately when the physician fails to enter on the death certificate a qualifying term which, if given, would modify the classification of the cause of death."

In 1928 Illinois, with a total of 90,195 deaths, had an inaccuracy in death cause assignments of 1.2% which was the lowest of any state in the registration area. In 1929 Ohio had the lowest percentage with 0.8 while

this state and Maine were tied for second low with 1.2. In 1930 Illinois again showed the lowest percentage of inaccuracy with only 0.5%. This is not an indicator of accuracy of diagnosis, but does indicate accuracy of assignment of death causes based upon the information contained in the certificate.

In May and June of 1934 there were 14,194 deaths from all causes in this state, transcripts of these certificates being sent to Washington as usual—283 of these transcripts, or a little less than .02%, were returned to the Division of Vital Statistics as inaccurate, with a request for supplemental information. Such information was obtained in over 50% of these cases, leaving an inaccuracy percentage for the two months of less than 0.1%.

Cooperating with the Census Bureau and beginning the first of this year, all supplemental information required to make accurate assignment of death causes is being obtained by this state upon receipt of the certificate, and it is anticipated that by this practice the element of inaccuracy will be even more limited than in the past.

Dr. Gowen selected peritonitis, pneumonia and ill-defined deaths, under which he also includes sudden death, and unspecified or unknown deaths, for intimate study, because of the possibility of poor definitions and non-specifications in connection with these diseases. There are, however, several other conditions that could be as well considered, which are the source of trouble in accurately assigning the death cause, such as unspecified tumors, unspecified nephritis, unspecified heart disease, congenital debility, and others which are not acceptable by the Census Bureau as a death cause.

With reference to deaths where pneumonia was concerned in Illinois in 1918 and 1929, it is stated that the inaccuracy percentage was decreased from 19.2 to 0.8.

In 1918 there were over twice as many pneumonia deaths in this state as in 1929 due to the "flu" epidemic, and to the presence of a number of army mobilization camps in the state. This, quite naturally, accounts for the high inaccuracy that year as to the type of pneumonia, for many physicians were at a loss as to the type of pneumonia they were dealing with. In 1929 when the pneumonia deaths had returned to a normal level as to number and type, it was not difficult to obtain a definite statement as to the type, and consequently there was a marked decrease in the percentage of inaccuracy.

With regard to unspecified peritonitis, data in the Division of Vital Statistics in the Department of Public Health for the ten-year interval from 1925 to 1934, shows some increase in such deaths, in spite of our efforts to obtain more specific information concerning the cause. Concerning ill-defined deaths, and unspecified or unknown deaths, there has been no improvement in the accuracy of our data. Such death causes in this state are found, with only rare exceptions, in coroner's cases, and are the result, at least in rural localities, of a mere inquiry by the coroner as to the probable cause, or the result of an inquest composed of laymen, and are not based upon autopsy findings. Consequently, it is impossible to obtain supplemental information allowing of more accurate assignment of the death cause in these coroner's cases.

"Sudden Death" as a death cause is not accepted in this state and there were no assignments to this title in 1934. The Statutes of Illinois require that "deaths without medical attendance" be investigated by the Coroner, and consequently *some* statement concerning the cause of death is received, even though, it is not always entirely accurate from a statistical view point.

I believe, that the matter of accuracy in mortality statistics depends more upon educating the physician concerning the need for full and accurate statements as to what he considers was the cause of death, than it does upon improving his professional ability, although both goals should be reached if possible.

I further believe, that the accuracy of our mortality statistics cannot be used as an indicator of the accuracy of diagnosis.

Dr. Gowen, (in closing): I am glad that Dr. Woodruff and Dr. McShane brought up the question of status of the coroner's office in the certification of certain deaths. I had the following experience in regard to an individual who had died suddenly. I had not treated the patient for a long period of time and was not willing to assume the responsibility of certifying the cause of death. I turned the case over to the coroner's office. I was called on the phone and asked if there had been anything in regard to the patient's death that suggested an unnatural cause. Upon answering no, I was asked what I thought the patient might have died of. Of course the logical thought in regard to an individual of about 75 years of age would be a myocarditis. In this case there was no postmortem examination, and yet the death was certified by the coroner's office.

Another thing I would like to mention which has always been a sore point with me, is the question of the relegation of death certification to the interne by the attending physician, in hospitalized cases. The doctor in his hurry to depart will tell the interne to fill out the death certificate and sign his (the attending physician's) name. I can not speak for areas outside of Chicago, but there it has been a common occurrence and unquestionably has lead to some eggregious errors. My experience in one such instance cured me of that particular habit. The patient died of a chronic myocarditis for which I had been treating her for six months. Being in a hurry I told the interne to certify the cause of death. Unfortunately the interne stated the duration of the myocarditis had been between one and two years instead of six months. The patient had taken out an insurance policy about one year prior to her demise. The insurance company therefore refused to pay the claim on the basis that the patient had the myocarditis when she was insured. This is one instance of what can happen under such conditions and this case caused a good deal of trial and tribulation to the husband before the matter was settled amicably.

I wish to thank the discussants very much. I enjoyed and appreciated their remarks.

ARTIFICIALLY INDUCED MALARIA AS A PUBLIC HEALTH HAZARD

H. J. SHAUGHNESSY
Chief, Division of Laboratories,
Illinois Department of Public Health
SPRINGFIELD, ILL.

Like the advent of other forms of therapy, the introduction of the artificial production of malarial fever as a means of treating neurosyphilis by Wagner-Jauregg[1] in 1918, created new problems in the maintenance of the public health. The most immediate of these was to prevent the spread of malaria from institutions to the general public. As soon as it was apparent that this form of therapy would be widely adopted, the British Board of Control[2] in 1924 issued a letter to the medical superintendents of all mental hospitals using this form of therapy requesting that all cases infected with malaria be kept in mosquito-proof wards or cubicles until microscopic examination proved that sexual forms of the malaria plasmodium were absent. This board also outlined a uniform and adequate course of quinine therapy for terminating the paroxysms of malaria. The Danish Board of Health[3] in the same year required the licensing of hospitals where the malarial therapy of syphilis was to be used.

As far as we have been able to learn, no such measures have been adopted by any health department in this country. Possibly the reason for this is that there has been no agreement concerning the likelihood of natural transmission of inoculated malaria by mosquitoes. Wagner-Jauregg[4] himself claims that his strain of tertian malaria has lost its power to form gametocytes by continuous passage through human hosts and therefore cannot be carried by anopheline mosquitoes. Careful experiments in his laboratory by Barzilai-Vivaldi and Kauders[5] indicated that mosquitoes could not transmit Wagner-Jaureggs' strain to humans.

On the other hand, Plehn[6], Mari[7], Bravetta[8] and Mühlens and Kirschbaum[9] all report finding gametocytes after as many as forty human passages of the tertian and quartan plasmodium. Fischer[10] asserted that oöcysts were present in the stomach wall of Anopheles mosquitoes which had drunk blood from a person inoculated with the Wagner-Jauregg strain. He, as well as Yorke and Wright[11] and Van Engel [12], reported the successful passage of malaria from patients to healthy persons by Anopheline mosquitoes. Fischer used the Wagner-Jauregg strain and Yorke and Wright used a strain of Plasmodium vivax which they had passed through 53 individuals artificially.

To date only two reports of natural infections due to artificially induced malaria have been recorded. Kling[13] in 1926 reported two cases that occurred in Sweden among patients located in a ward 100 meters from the ward in which patients inoculated with malaria resided. A note[14] in the *Lancet* of July, 1934, mentions another case in which a laborer working near an asylum in Paris where malaria treatment of paretics was being used became infected. His wife who spent her evenings with him and who reported being bitten by mosquitoes many times also became infected and Plasmodium vivax was found in her blood.

Our own interest in this problem was aroused late last summer. At that time it was noted that an unusual number of specimens were being examined for malaria parasites at the request of the medical staff of one of the state institutions. Many of these showed the presence of definite parasites and a number more showed bodies which resembled malaria parasites but which were atypical in one respect or another. Most of these specimens had been sent to the laboratories of the State Department of Public Health for confirmation of the findings of the laboratory technician of the institution. That person had been well trained and had had experience in malaria examinations in the tropics. He seemed to be apt to call specimens positive however, without enough evidence and we have therefore considered only those which were found to be positive in our laboratories. Of the specimens from 118 patients submitted to us 25 were positive. Practically all of these were single specimens. Additional specimens would probably have brought other positives to light.

Of the 25 positives, 6 were from patients who had a history of previous inoculation, 11 were from uninoculated patients, 6 from employes and 2 were from persons residing outside but near the institution grounds. One of the latter kept a store across the street from the hospital. The other was the eight year old daughter of one of the attendants who showed symptoms and had malaria parasites in her blood at this time. The

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child had arthritis and was confined to her home.

An examination of the case histories showed that the records of eight uninoculated patients diagnosed by the staff as having malaria were available. One of these developed symptoms the day after admission. The others had resided in the institution for some time. All showed some symptoms of malaria including hyperpyrexia, ranging from 99.4 to 107.2. All showed the presence of malaria parasites in blood films. All were given quinine excepting one who expired before she could be treated. Two others died also. The remainder made a good recovery under quinine therapy.

Of the six employes, three were sick enough to be hospitalized and of these only two records were available. In all three cases malaria parasites were found. One had chills and fever but a subnormal temperature. She recovered when given quinine and atebrine. The other had no chills but a continuous high temperature and nausea until medication was begun. Her temperature dropped from 104.6 in the afternoon to 101.0 the next day with quinine and then back to 104.6 later the same day. She was intolerant to quinine but her temperature became normal and she had remission of symptoms in five days with atebrine.

The three employes who were not ill enough to be hospitalized all showed mild chills and fever, headache, nausea, and weakness. Two of them had previously had malaria, one ten years before and one about forty years before with complete remission at that time. All three made good recovery with quinine. A few other employes, including several physicians and nurses, also felt ill at this time and recovered promptly when they took quinine but their records are not considered because malaria parasites were not unquestionably demonstrated in their blood.

The one person living outside the institution from whom a history was obtained was the bedridden child mentioned above who lived 3 blocks from the hospital. She had chills every day with temperature and recovered under quinine therapy.

From the above summary it appears that there was an illness which was probably malaria among uninoculated persons living in and near the institution. The next step was to learn whether anopheline mosquitoes were present within flying distance and whether they had access to patients who were inoculated with malaria parasites.

Culecine mosquitoes were found to be breeding freely in one of the ornamental pools on the grounds of the institution and one anopheles larva was found in the same pool. A small creek which ran past the corner of the hospital was found by Mr. H. A. Spafford, assistant sanitary engineer of the State Department of Public Health, to contain large numbers of anopheles larvae. They proved to be Anopheles punctipennis which are not good carriers of malaria. However, the survey was made in the late fall and it is possible that the Anopheles quadrimaculatus, the principal vector of malaria in this region, may have been breeding there earlier in the year. That point will be investigated this summer.

There appears from our study to be little doubt that an accessible reservoir of malaria parasites existed in the hospital. It was discovered that the usual technic for handling cases of induced malaria was as follows: the patients were inoculated with blood from a previously inoculated patient who was showing chills; no examination was made of the first patient's blood to be sure that he was free from the parasites of aestivo-autumnal or quartan malaria; after the desired number of chills, usually ten, were obtained, the patient was supposed to receive 10 grains of quinine daily for two months; in practice he received quinine only until the paroxysms were controlled. This was shown to be insufficient by the fact that three of the six inoculated patients studied had recurrences. One had been inoculated originally in December, 1932, had a recurrence in January, 1933, and another in July, 1934, at which time parasites were found in his blood. Another patient had been inoculated in August, 1933, had a recurrence in November, 1933, and showed parasites in his blood smears in July 1934. Some of the smears showed the presence of gametocytes, indicating that mosquito transmission was theoretically possible. These patients were kept in unscreened quarters at all times.

Another interesting fact was discovered which may account for the fact that malaria seemed to spread in the institution last summer for the first time, although the inoculation method had been used there for some years. It was learned that in the spring of 1934, probably in April,

that the strain of malaria which had been used up to that time had been lost simultaneously in several hospitals. A new strain was obtained from a natural case of malaria. It may be that this strain was more easily spread by mosquitoes. By the time that we were called into the case the old strain had been recovered and was being used although the records were somewhat confused and any one of three strains might have been in use.

In view of the conflicting reports in the literature, it remains to be proved that malaria can be transmitted from inoculated patients to well persons under controlled conditions. We began such an experiment last fall but, due to inexperience in raising mosquitoes, we lost them before we could use them. No more could be obtained during the winter but plans are under way to continue work on this phase of the problem this summer.

The following conclusions may be tentatively drawn: There appeared to be cases of malaria, largely of atypical nature, among uninoculated patients and employes of a state hospital; a reservoir of potential infection probably existed among inoculated patients incompletely treated to rid them of malaria parasites; smears of these patients' blood revealed gametocytes capable of being transmitted by mosquitoes; anopheline mosquitoes were breeding within flying distance of the reservoirs of infection; and finally, neither inoculated patients nor uninoculated patients were protected by screens.

Pending absolute proof that inoculated malaria may be transmitted by mosquitoes it is recommended that the following measures be used to prevent possible outbreaks of malaria due to this cause: no blood be transferred from patient to patient until several microscopic examinations prove that only tertian parasites are present; that all inoculated patients be protected against mosquitoes by screening until quinine therapy causes the parasites to disappear from the peripheral blood; that mosquito breeding within flying distance of any hospital using this form of therapy be suppressed; that all inoculated patients be given the "standard" course of quinine therapy and that they be found to be free of malaria parasites on at least three successive examinations before being discharged from treatment; and finally, that induced malaria be used only in hospitals properly equipped for that purpose. The last statement will become even more important if malaria therapy is adopted more generally as a mode of treatment as it appears likely to be.

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DISCUSSION

Dr. Howard Gowen, Chicago: Following the introduction of artificially induced malaria as a form of therapeusis for general paralysis of the insane by Wagner and Jauregg, the new potential public health hazard thus created was soon appreciated as is evidenced by the early circularization of mental hospitals by the British Board of Control, Danish Board of Health and the U. S. Public Health Service in regard to measures that should be employed to prevent unwarranted dissemination of this disease. That eventually evidence would present itself signifying an apparent outbreak of malaria as a result of this form of treatment was inevitable and such an instance has arisen in our State of Illinois.

For the purpose of determining whether there had been similar experiences elsewhere and with the additional idea of obtaining information as to the mode of handling of patients so treated, a questionnaire was sent to sixteen mental hospitals in this country. Two of these hospitals did not employ this form of therapy and the remaining fourteen did employ it. The interrogations made and the information elicited are as follows:

1. How are the patients inoculated?
   In thirteen the donor to patient method was employed and in one case in Texas, mosquitoes were used.
2. What type of malarial parasite is employed?
   In eleven hospitals the benign tertian was used, in two hospitals the benign tertian was used for whites and the quartan for colored, and in one the quartan type was employed.
3. After inoculation, are the patients isolated from other patients or are they allowed to mingle promiscuously with the others?
   In seven hospitals there was no isolation, in three hospitals isolation was caried out and in

four, isolation was instituted only after the chills had begun.

4. In the warm weather, are these inoculated patients permitted to go out on the sanitarium grounds?

   In twelve hospitals, the patients were not allowed outside of the ward, and in two cases they were allowed on the sanitarium grounds. (Alabama being one of these.)

5. Are the quarters of the patients inoculated with malaria screened?

   In 12 hospitals the quarters were screened. In most of these cases ordinary screens were employed. In one case in Texas, double screening was employed. In two cases there was no screening.

6. After the result is obtained or not obtained from such inoculation, what medication is employed to rid the patient of the paraste?

   Seven hospitals employed quinine only, two hospitals quinine, plasmochin or atabrin, two hospitals neosalvarsan and one tryparsamide and mercury salicylate.

7. After receiving anti-malarial treatment, what is the basis for determining whether the patient is completely rid of the parasite or not?

   In seven cases release was based on blood smears and clinical improvements, in four cases primarily on clinical improvement and occasionally blood smears, and in three cases only on clinical improvements.

8. Have any cases of malaria occurred in other patients or attendants other than those who received the artificial inoculations?

   All fourteen hospitals reported that no secondary cases had occurred traceable to the inoculated paretics. Of course in the southern states, this would not be as significant.

While it is true that seemingly no malaria occurred in the queried institutions in those uninoculated, and while it is true that a survey of the literature by the U. S. Public Health Service up to 1933 revealed the occurrence of only two cases of natural infection from induced cases, nevertheless the hazard remains and the regulations restricting its spread may well be improved in some instances. The danger would seem to be not in regard to the patients actively experiencing the disease, because they are kept in bed, but more in regard to those in whom the course of treatment has been stopped. In the latter, release after too little post-malarial medication and with too little evidence of freedom from the parasite, could well result in a satisfactory reservoir for the proper type of anopheles mosquito. While it is true that benign tertian malaria is employed in most instances and in its asexual form, nevertheless true gametocytes may appear after long intervals. Yorke and Wright successfully experimentally transferred a strain of Plasmodium vivax on humans using the Anopheles maculipennis after the 53rd induced passage. There is inclined to be too much of a sense of security on the part of those employing malaria in paretics because of the fact that the plasmodium in its asexual form can not be transmitted by the Anopheles. It should be borne in mind that sexual forms may appear. The mere absence of sexual forms on blood smears while asexual forms are still present does not warrant any relaxation in regard to the restriction of the patient. He is still potentially a malarial threat.

Dr. Shaughnessy, in closing: Of course, as soon as we thought this possible hazard existed we got in communication with the hospitals concerned and asked them to carry out certain regulations which have been outlined. It may be of interest to know that we believe that these are being carried out in some of the hospitals because we have had requests from several State hospitals and from one federal institution in this State using this form of therapy for a examination of blood smears prior to passing on the parasites. It indicates, in other words, that some attention is being paid at least to this part of the problem.

There is one other problem in connection with this which we haven't touched on, and that is the difficulty of screening these individuals. Most of the hospitals using this form of therapy claim they don't have the funds for screening all of their windows. It isn't the primary cost that they are worrying about, but the fact that the patients, of course, in such institutions are very apt to knock the screens out very readily. They say this would entail an enormous expense. However, I think it would be easily possible for any institution to keep the inoculated patients in a hospital on the grounds where they could be kept under mosquito-proof screens. It would also be possible in most instances for the hospital to eradicate mosquito-breeding places within flying distance of the hospital.

STATISTICAL STUDY OF CORONARY DISEASE. A REVIEW OF 6754 NECROPIES.

JACK D. KIRSHBAUM, M.S., M.D.
CHICAGO

This paper is a statistical study of severe coronary disease in 612 cases selected from 6754 consecutive necropsies performed at the Cook County Hospital, from 1929 to 1934 inclusive. The following study constitutes the personal observations of the writer, and no attempt has been made to review or discuss the present extensive literature relative to coronary disease. The analysis is concerned with the following points of interest: (1) Relationship of coronary sclerosis to hypertrophy of the heart in the cases in which the hypertrophy of the heart is the essential anatomical findings. (2) Coronary sclerosis without occlusion of the lumen as the cause of death or as an incidental finding. (3) Incidence of

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From the Department of Pathology, Cook County Hospital, Dr. R. H. Jaffé, Director.

coronary occlusion due to either an atheromatous process, thrombosis, or embolization as the cause of death or as an incidental finding. (4) Severe myocardial changes without coronary sclerosis. In this group the myocardium showed marked diffuse fibrosis, focal scarring or myomalacia.

In each of the four groups the following additional factors were considered. Anatomical or serological evidences of syphilis, acute or chronic changes of the pericardium, age, sex, race, and the condition of the medium sized arteries, besides the coronary vessels.

1. HYPERTROPHY OF THE HEART AS THE ESSENTIAL ANATOMICAL FINDING

There are 403 cases in this group, which may be also termed the group of essential hypertension (see Table 1).

TABLE 1. HYPERTROPHY OF THE HEART IN 403 CASES

	Age						Sex		Race		Degree of Hypertrophy				Changes in the Myocardium				
	21-30	31-40	41-50	51-60	61-70	71	M	F	W	C	Slight 325-400 Gm.	Moderate 400-600-Gm.	Marked 600 Gm. plus	Coronary Sclerosis	Marked Fibrosis	Myomalacia	Aneurism	Syphilis	Pericarditis
No.	8	32	89	100	103	71	257	146	226	177	7	326	70	155	27	4	7	74	38
%	1.98	7.94	22.09	24.89	25.55	17.62	63.8	36.2	56.3	43.7	1.74	80.89	17.37	38.46	6.7	0.99	1.73	18.36	9.43

The age varied from 21 years to 80 years. Most of the cases were between 41 and 70 years, and the highest incidence was found in the group from 61 to 70 years, namely 103 cases or 25.55%. There were 257 males and 146 females. As to race 226 were white and 177 colored. The degree of hypertrophy of heart was as follows: slight (325 to 400 grams) seven cases or 1.74%; moderate (400 to 600 grams) 326 cases, or 80.89%, and marked (over 600 grams) 70 cases, or 17.37%. The changes in the myocardium were only recorded if there was marked fibrosis, myomalacia or aneurysm formation of the ventricular wall. A marked fibrosis or scarring was noted in 27 cases or 5.7%, myomalacia in 4 cases or 0.99% and aneurysm formation in 7 cases or 1.73%. The most frequent site of the lesion was the anterior wall of the left ventricle in the region of the apex. Syphilis was present either anatomically or serogically in 74 cases or 18.36%. Pericarditis was manifested in the form of a fibrinous exudate, or ancient fibrous obliteration of the sac in 38 cases or 9.43%.

Severe coronary sclerosis was only noted in 155 cases or 38.46%. The statement is frequently made that hypertrophy of the heart and coronary sclerosis are usually associated together. In my material there was no parallelism between the two conditions in the same individual, since as stated the incidence of coronary sclerosis was only 38.46% in the group of 403 cases with hypertrophy of the heart.

2. MYOCARDIAL CHANGES WITHOUT CORONARY SCLEROSIS

In all of the 17 cases of this group the heart was hyptertrophied (see Table 2). In seven cases the age varied between 30 and 40 years, in four between 41 and 50 years, three between 51 and 60 years, and three between 61 and 70 years. The highest incidence was between 30 and 40 years or 41.18% of the cases. All 17 cases were males; eight white and nine colored. The myocardium showed a marked fibrosis in 12 cases or 70.62%, and a myomalacia in six cases. In one of the cases both conditions were present.

Syphilis was present in only one case and pericarditis in two cases.

The coronary arteries were thin walled and their intima down to the finest branches was smooth. The changes in the myocardium therefore could not have been due to an anatomical demonstrable narrowing or occlusion of the larger lumena of the coronary arteries.

Microscopic examinations of the hearts also failed to reveal changes in the arterioles to account for the myocardial lesions. Since no anatomical changes could be demonstrated to explain the extensive myocardial changes, one is forced to look for functional disturbances of the myocardial circulation such as repeated arterial spasms. The valves in these cases were also found unchanged,

so that an old inflammatory process can be excluded.

TABLE 2. MYOCARDIAL CHANGES WITHOUT CORONARY SCLEROSIS. 17 CASES.

	Age				Race		Sex		Hypertrophy of Heart		Type of Myocardial Lesion			
	30-40	41-50	51-60	61-70	W	C	M	F	Moderate	Marked	Marked Fibrosis	Myomalacia	Syphilis	Pericarditis
No.	7	4	3	3	8	9	17	..	13	4	12	6	1	2
%	41.18	23.54	17.64	17.64	52.94	47.06	100.00	..	76.47	23.53	70.62	29.38	5.89	11.77

Note: In one of the cases, the myocardial lesion showed a marked fibrosis and a myomalacia.

3. CORONARY SCLEROSIS WITHOUT OCCLUSION OF THE LUMEN

There were 135 cases of severe coronary sclerosis without occlusion of the lumen. In 99 cases, the coronary sclerosis was an incidental finding, death being due to carcinoma, encephalomalacia, cerebral hemorrhage, cerebral thrombosis, pulmonary tuberculosis and pneumonia, in the order of their frequency. Ninety-four cases or 69.6% were over 60 years of age; 31 cases or 22.96% were between 51 and 60 years. In this group there were 96 males and 39 females. As to race, 113 were white and 22 colored.

Sclerosis was found more frequently in the coronary arteries than in the other medium sized arteries of the same individuals; 113 cases or 83.7% showed a moderate to a marked degree of generalized arteriosclerosis, whereas in 16.3% of the cases the other medium sized arteries were spared.

The heart was found hypertrophic in 71 cases or 52.59%, varying from a moderate to a marked degree. The myocardial changes were as follows: marked fibrosis in 28 cases or 20.74%, myomalacia in seven cases or 5.18%; six cases or 4.78% showed aneurysm formation of the wall of the left ventricle (see Table 3).

4. CORONARY OCCLUSION DUE TO ATHEROMATOUS PROCESS, THROMBOSIS OR EMBOLISM IN FIFTY-SEVEN CASES

In 47 of the 57 cases the occlusion of the coronary artery was the cause of death, while in the remaining ten cases the coronary occlusion was an incidental finding, death being due to carcinoma, diabetes mellitus, lobar pneumonia, encephalomalacia, or arteriosclerotic gangrene of the extremities (see Table 4).

Coronary occlusion was caused by severe atherosclerosis in 25 of the cases or 43.85%. In some cases in addition to the above process a recent thrombosis of a second branch was found.

There are a group of cases in which the occlusion of one or more branches of the left or right coronary arteries is so gradual that sufficient time elapses for the collateral circulation to develop, and maintain life. In these cases the myocardial damage, results in a marked scarring, with eventual subsequent formation of an aneurysm. It is also interesting to note that in this group of cases, clinically, no mention is made by the patient of an attack during the period of gradual occlusion of the coronary artery, which is discovered at autopsy. One may term such a condition as a silent progressive

TABLE 3. CORONARY SCLEROSIS WITHOUT OCCLUSION OF THE LUMEN IN 135 CASES

	Age					Sex		Race				Myocardial Changes				
	31-40	41-50	51-60	61-70	71+	M	F	W	C	Hypertrophy of the Heart	Sclerosis in other Arteries	Marked Fibrosis	Myomalacia	Aneurysm	Syphilis	Pericarditis
No.	2	8	31	47	47	96	39	113	22	Moderate 56 Marked 15	Moderate 69 Marked 44	28	7	6	12	11
%	1.48	5.92	22.96	34.82	34.82	71.11	28.89	83.7	16.3	Moderate 41.48 Marked 11.11	Moderate 51.11 Marked 32.6	20.74	5.18	4.78	9.55	8.15

Note: In 99 of the 135 cases, the coronary sclerosis was an incidental finding, death being due to carcinoma, encephalomalacia, cerebral hemorrhage, cerebral thrombosis, pulmonary tuberculosis, pneumonia, etc.

Syphilis was noted in twelve cases or 9.55% and eleven cases showed either acute fibrinous pericarditis or fibrous obliteration of the pericardial sac.

coronary occlusion due to an atheromatous process. Not infrequently such patients with

TABLE 4. CORONARY OCCLUSION DUE TO ATHEROMATOUS PROCESS, THROMBUS, EMBOLUS, IN 157 CASES.

	Age						Sex		Race		Intensity of Cononary Sclerosis	Type of Occlusion	Mycardial Changes						
	21-30	31-40	41-50	51-60	61-70	71+	M	F	W	C			Hypertrophy of Heart	Marked Fibrosis	Myomalacia	Aneurysm	Sclerosis in other Arteries	Syphilis	Pericarditis
												Atheromatous Process 25							
											Moderate 7	Recent Thrombosis 19							
No.	2	2	12	13	16	12	38	19	46	11		Organized Thrombosis 11	27	17	24	15	29	5	16
											Marked 35	Embolis 4							
												Atheromatous Process 43.85							
											Moderate 15.78	Recent Thrombosis 33.34							
%	3.5	3.5	4.06	22.8	28.08	21.06	66.66	33.34	80.7	19.3		Organized Thrombosis 19.3	47.36	29.82	42.1	26.31	50.87	10.6	28.08
											Marked 61.4	Embolus 7.0							

Note: In 47 of the 57 cases the occlusion of the coronary artery was the cause of death, while in the remaining 10 cases the coronary occlusion was an incidental finding, death being due to carcinoma, diabetes mellitus, lobar pneumonia, encephalomalacia, or gangrene of the extremities.

occlusion of one of their coronary arteries, will develop an acute coronary thrombosis in another branch followed by myomalacia, pericarditis, mural thrombi, occasionally rupture of the wall of the heart and sudden death. Nineteen cases or 33.3% showed recent coronary thrombosis. In eleven cases or 19.3% the thrombosis became organized, even recanalized. Coronary occlusion due to an embolism was found in four cases or 7%, all secondary to a malignant vegetative endocarditis.

The anterior descending branch of the left coronary artery was most frequently affected. It was involved in 50% of the cases while the circumflex branch of the right coronary artery was second in frequency, and occurred in 26.3% of the 57 cases.

In this series of 57 cases the myocardium showed severe alterative changes in 56 cases. Marked fibrosis was present in 17 cases or 29.82%; myomalacia in 24 cases or 42.1%; and aneurysm formation in 15 cases or 26.3%.

Syphilis was present in only five cases or 10.6%. There were 16 cases or 28.07% that showed either an acute or chronic pericarditis.

Discussion. In a series of 6754 necropsies, 612 cases were selected to study coronary disease and were reviewed from a pathological aspect only (see Table 5).

TABLE 5. SUMMARY OF CASES IN 6754 AUTOPSIES

	Number of Cases	Percent of Total Autopsies
Hypertrophy of the Heart	403	5.9
Coronary Sclerosis without Coronary Occlusion as an Incidental Finding	99	1.5
Coronary Sclerosis without Occlusion of the Lumen as the Cause of Death	36	0.53
Myocardial Changes without Coronary Sclerosis	17	0.25
Coronary Occlusion as the Cause of Death	47	0.69
Coronary Occlusion as an Incidental Finding	10	0.15
Total	612	9.02

There were 403 cases in which hypertrophy of the heart was the essential anatomical finding. Severe coronary sclerosis was present in only 155 cases or 38.46%, thus its incidence in hypertrophy of the heart is not unusually high.

There were 17 cases of severe myocardial changes characterized by marked fibrosis, and myomalacia without any coronary sclerosis, narrowing of the lumen or occlusion. Anatomical evidences for the myocardial changes could not be demonstrated. There were no valvular changes or syphiltic process to explain the changes.

Coronary sclerosis without occlusion of the lumen occurred in 135 cases, and in 99 cases the coronary sclerosis was an incidental finding, death being due to some unrelated condition. In 83.7% of the cases there was also in addition a severe sclerosis of the other medium sized arteries. This group also contained 41 cases with severe myocardial changes, without occlusion of the lumen of the coronary arteries.

Coronary occlusion due to an atheromatous process, thrombosis, or embolus as the cause of death was found in 47 cases and in ten cases it was an incidental finding. The thrombus may become organized and later recanalized. If the occlusion is gradual, sufficient time elapses for

the collaterals to develop and the patient recovers and may not show any symptoms referable to his heart. The myocardium becomes severely scarred, and an aneurysm may form. As stated such a patient may not show any clinical manifestations of coronary occlusion, and may die from an acute coronary thrombosis in another uninvolved branch of one of the coronary arteries, or some other condition unrelated to the changes of the heart.

CONCLUSION

A satistical study of coronary disease is made based upon a review of 6754 necropsies; 612 cases were selected and divided into four groups as described (see Table 6).

Coronary sclerosis occurred in 54.2% of the 612 cases. The heart was found hypertrophied in 84.6% of the cases.

Syphilis determined from anatomical changes or serological findings was noted in 15% of the cases. Two-thirds of the group were males.

The myocardium showed marked degenerative changes in 153 cases or 23% of the 612 cases, and not infrequently the coronary arteries were unchanged.

Clinically coronary occlusion may be a silent condition unrecognized during life.

TABLE 6. ANALYSIS OF 612 CASES.

Group No.	Cases	Sex		Race		Coronary Sclerosis (severe)	Hypertrophy of Heart	Syphilis	Pericarditis	Myocardial changes		
		M	F	W	C					Marked Fibrosis	Myomalacia	Aneurysm
1	403	257	146	226	177	155	403	74	38	27	4	7
2	17	17	...	8	9	...	17	1	2	12	6	..
3	135	96	39	113	22	135	71	12	11	28	7	6
4	57	38	19	46	11	42	27	5	16	17	24	15
Tl.	612	408	204	393	219	332	518	92	67	84	41	28
%	...	66.6	33.4	64.2	35.8	54.2	84.6	15.0	10.9	13.7	6.7	4.6

BLOOD GROUPING TESTS IN THE MEDICOLEGAL DETERMINATION OF NON-PATERNITY

C. W. MUEHLBERGER, Ph.D.

CHICAGO

The rule in law established by the courts of this country, that an accused person shall not be required to give testimony against himself has frequently been a bar to the application of medical science in the adjudication of court cases. During recent years the courts have taken a more liberal view of this rule, holding that in certain instances the strict adherence to it has been contrary to public policy. Thus it has been held that requiring a man to give impressions of his fingerprints for identification purposes did not materially jeopardize his legitimate interests. Later the courts in certain jurisdictions have required the plaintiff in a damage suit to submit to a medical examination to determine the nature and extent of the alleged disability, and even to submit to the taking of blood for serologic examination. It is interesting to note the variation in this rule with respect to the determination of non-paternity by means of blood grouping characteristics.

Read before the Section on Public Health and Hygiene of Illinois State Medical Society, Rockford, Illinois, May 23, 1935.

From the Department of Toxicology, Northwestern University Medical School and the Coroner's Laboratory of Cook County.

TABLE 1

Relationship of Main Blood Grouping Characteristics Existing Between Child, Mother, and Father,

Child	Mother	Father: Possible	Father: Excluded
O	O	O, A, B	AB
O	A	O, A, B	AB
O	B	O, A, B	AB
A	O	A, AB	O, B
A	A	O, A, B, AB	None
A	B	A, AB	O, B
A	AB	O, A, B, AB	None
B	O	B, AB	O, A
B	A	B, AB	O, A
B	B	O, A, B, AB	None
B	AB	O, A, B, AB	None
AB	A	B, AB	O, A
AB	B	A, AB	O, B
AB	AB	A, B, AB	O

TABLE 2

Relationship of Landsteiner's Blood Sub-Groups (Agglutinogens) in Child, Mother, and Father.

Child	Mother	Father: Possible	Father: Excluded
M	M	M, MN	N
M	MN	M, MN	N
N	N	N, MN	M
N	MN	N, MN	M
MN	M	N, MN	M
MN	N	M, MN	N
MN	MN	M, N, MN	None

The present status of our knowledge concerning the four main blood groups is so well known as to require no comment here. Further, it may be stated that the rules of inheritance of these blood grouping characteristics as developed by von Dungern and Hirszfeld[1] and modified by Bernstein[2] is founded upon such conclusive evidence that its acceptance by the medical profession has been universal. By comparing the blood groups of the child, mother and supposed father, a falsely accused man has

about one chance in six of proving that he could not have been the father of the child.[3] The addition by Landsteiner of three additional agglutinogen characteristics (M, N and MN) and their utilization in tests of non-paternity increases a falsely accused man's possibility of exoneration to one chance in three or four.[4]

It must be borne in mind that blood grouping tests can never prove that a man is the father of a child; they *may* prove that he could not be the father in a limited number of instances.

The following decisions have been handed down by our courts in cases involving this use of blood grouping.

State (of South Dakota) *v. Damm.*[5] This was a case of a man charged with rape of a minor foster daughter. The daughter later bore a child. The defendant petitioned the court to order blood grouping tests of the infant, mother and himself to enable him to prove non-paternity. This was denied by the court on the ground that the proposed test had not been established as thoroughly reliable. On appeal to the higher court, this refusal to order the blood grouping test was held not to be an abuse of the lower court's discretion.

Commonwealth (of Pennsylvania) *v. Zamorelli.*[6] Defendant was charged with bastardy. To combat this charge he called as a witness a medical expert who had made blood grouping tests of the child, mother and defendant. He testified that as a result of his tests, it could be positively stated that defendant could not have been the father of the child. There was no medical testimony offered by the prosecution to rebut the blood-grouping evidence, but in spite of this fact, the jury returned a verdict of guilty. On appeal, the higher court set aside the verdict and granted a new trial in order to give the prosecution an opportunity to confirm the blood grouping test. No record of the new trial is to be found in the case reports.*

Buschel v. Manowitz. This was a suit for damages for an alleged carnal assault. Plaintiff later bore a child supposedly as a result of the assault. Defendant moved the trial court to require plaintiff and her child to submit to blood grouping tests to enable him to prove his innocence. The court ordered the tests but an appeal was taken from the court's ruling. The court of appeals upheld the decision of the trial court, whereupon an appeal was taken to the Appellate Division of the New York State Supreme Court. This court reversed the rulings of the lower courts not on the basis that the test was unreliable but on strictly legal grounds. They reasoned that this being a suit for damages between the man and woman, the child was in no way a party to the suit; and therefore the court had no jurisdiction over the child to compel it to submit to the test. Without the blood group of the child, the test on the mother would be useless for determining non-paternity.

Taylor v. Diamond.[8] Was a similar case in which the higher court held that "in the absence of statutory authority, the court of Special Sessions in a paternity proceeding may not compel blood tests to be taken.†

Commonwealth (of Pennsylvania) *ex rel. Antoinette Visocki v. Frank Visocki.*[9] The action was for non-support. Testimony brought out that the prosecutrix (age 20) and the defendant (age 42) were married on May 9, 1933. Testimony as to intercourse was in conflict, the husband stating that he had never had intercourse with his wife because on the evening of their wedding day he heard that she was pregnant. The wife testified that she had intercourse with her husband only once, on May 13. They continue to live together for four months. It was conceded that the child was born in wedlock seven months after conception, presumably as the legitimate offspring of the parents. To overcome this presumption, the defendant introduced medical testimony to show that there was no strain of his blood in the child and that he was not the child's father. Two physicians testified in his behalf that they had both conducted blood grouping tests of the mother, child, and defendant father; that the mother and child both belonged to Group O of the Landsteiner scale; that the defendant belonged to Group AB of the Landsteiner scale; that if the child in this case (Ethel Visocki) was the child of the prosecutrix, Antoinette Visocki, the defendant, would not and could not be the father of the child. To contradict this evidence, the Commonwealth called another physician to testify in regard to the use of blood tests in determining paternity. This witness stated that, "In my opinion, no such test is at all conclusive and as I see it in my reading of the literature and contact with my brother physicians, that no such theory or opinion is accepted; that in my opinion such a set of circumstances, the mother Group O, the child the same group, and the father, Group AB, means nothing—not capable of any proof. These assertions regarding blood and blood typing in relation to paternity are theoretical." The court in commenting upon the testimony stated, "In our opinion, comparing the positive, not to say aggressive, circumstantial, and particular testimony of the witnesses for the defendant with that of the witness for the prosecution, which seems to us to be more general, lacking in individual and concrete authority for his position, the strong weight of the evidence uphold the contention of the defendant, who has sustained the burden which the law casts upon him, he being the husband of the woman who gave birth in lawful wedlock to a child, that he is not the father of the child." The case was dismissed.

Wiener (loc. cit. page 191) cites a case in the court of Common Pleas of New Haven, Conn., in 1933. An

*This probably is the case referred to by Wiener "Blood Groups and Blood Transfusion" Springfield and Baltimore, 1935, page 200, in which a new trial was not necessitated.

†It is interesting to note that the New York Legislature has enacted (March, 1935) a statute, approved by the governor, which empowers the courts of the State to order blood tests in lawsuits at their discretion.

unmarried woman accused a man of being the father of her child. Blood grouping tests showed the woman to belong to Group O, the child to Group B and the alleged father to Group A. When the impossibility of such a combination was pointed out to the woman, she withdrew her charge.

The Chicago newspapers of May 3, 1935, report the case of Mrs. Olga Blum v. Louis Blum in which Superior Court Judge F. B. Allegretti ordered blood grouping tests to settle the question of paternity of the child in question.

These cases indicate the general trend toward the acceptance of these tests by the courts of this country just as they have already been accepted by the courts of practically all European countries as well as Japan and Brazil. It is hoped that the grouping tests for use as evidence in court will be performed only by qualified serologists. Pseudo-agglutination results in the hands of unskilled workers may not only work grave injustice but would tend to bring a reliable medicolegal technique into disrepute.

DISCUSSION

Dr. Wm. C. Woodward, Chicago: Arguments concerning the admissibility or inadmissibility in court of evidence based on blood grouping tests represent simply a stage in development that precedes the establishment of the admissibility of evidence based on any new scientific procedure. Similar arguments preceded the determination of the admissibility of evidence based on the serologic examination of supposed blood stains, on the study of finger-prints, and on roentgenologic studies. The admissibility of evidence derived from technical ballastic examinations and from the so-called lie detector is now in the same stage of juridical study and evolution. The rule with respect to the admissibility of all such evidence has probably been nowhere better stated than it was by the Court of Appeals of the District of Columbia, on December 3, 1923, as follows:

"Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized, and while courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs.

"We think the systolic blood pressure deception test has not yet gained such standing and scientific recognition among physiological and psychological authorities as would justify the courts in admitting expert testimony deduced from the discovery, development, and experiments thus far made." Frye v. United States, 54 App. D. C. 46; 293 F. 1013; 34 A. L. R. 145.

The decision of the Court of Appeals of the District of Columbia, in 1923, was followed by the Supreme Court of Wisconsin, January 10, 1933, when the court held that it was not error to refuse to admit evidence showing the results of an examination made by the so-called lie detector, when the Wisconsin court suggested:

"The present necessity for elaborate exposition of its theory and demonstration of its practical working, in order to convince the jury of its probative tendencies, together with the possibility of attacks upon the soundness of its underlying theory and its practical usefulness, may easily result in a trial of the lie detector rather than the issues in the cause." State v. Bohner, 246 N. W. 314.

These two cases have been cited to illustrate the general principles governing the admissibility of testimony such as that now under consideration. The admissibility of evidence based on examinations to determine blood grouping has been passed on directly by appellate courts in South Dakota and New York.

The Supreme Court of South Dakota, December 29, 1933, affirmed a judgment of the trial court excluding evidence of blood grouping to aid in proving paternity or non-paternity. The court said:

"Without endeavoring to arrive at any decision on other questions involved in connection with this particular claim of error, we hold that the learned trial judge did not abuse his discretion in refusing to order the blood test requested by appellant. We base such holding specifically upon the proposition that it does not sufficiently appear from the record in this case that modern medical science is agreed upon the transmissibility of blood characteristics to such an extent that it can be accepted as an unquestioned scientific fact that, if the blood groupings of the parents are known, the blood group of the offspring can be necessarily determined, or that, if the blood groupings of the mother and child are known, it can be accepted as a positively established scientific fact that the blood group of the father could not have been a certain specific characteristic group. In other words, we think it insufficiently appears that the validity of the proposed test meets with such generally accepted recognition as a scientific fact among medical men as to say that it constituted an abuse of discretion for a court of justice to refuse to take cognizance thereof, as would undoubtedly be the case if a court today should refuse to take cognizance of the accepted scientific fact that the finger prints of no two individuals are in all respects identical." State v. Damm, 252 N. W. 7.

Under date of February 20, 1934, a South Dakota correspondent reported that the Supreme Court had given a rehearing in this case but on what grounds was not stated. No record has been found in the Reporter system, however, to show that a rehearing was ever granted or held or to show any action whatever by the court since the decision quoted above was given.

In New York, the supreme court, King's county, January 2, 1934, in a carefully considered opinion in a civil action for damages for alleged assault by the defendant, resulting in the birth of a child to the plaintiff, held that the defendant was entitled to require the plaintiff and her child to permit the taking of specimens of blood for examination by the blood grouping test, to determine paternity. *Beuschel v. Manowitz*, 271 *N. Y. S.* 277.

But the supreme court, appellate division, second department, May 25, 1934, reversed the order of the trial court, both on the law and on the facts, holding that the New York statute relating to the physical examination of a plaintiff was inapplicable. The court said:

"This child is not a party to this action; and while a court of chancery has an inherent jurisdiction over the welfare of an infant, a ward of the court, nothing in this case indicates in the slightest that the welfare of this infant is in any wise involved or that the blood test could possibly be beneficial to the

infant. Section 306 of the Civil Practice Act has no application to the facts of this case." Beuschel v. Manowitz, 272 N. Y. S. 165.

The fact that this reversal was based on the court's construction of the New York statute limits its applicability as a precedent.

While the technical correctness of the court's decision with respect to the child was clear, the decision in so far as the mother is concerned would seem to be inconsistent with the rule laid down in a somewhat similar case in which evidence based on the examination of specimens of blood was desired, not for the purpose of proving paternity or identity but for the purpose of proving the presence or absence of disease. In *Hayt v. Brewster, Gordon & Co., Inc.*, the supreme court, special term, Monroe county, July 11, 1921, in a personal injury case, held that the New York statute authorizing physical examination did not cover blood tests (189 N. Y. S. 907). This decision was reversed, however, by the supreme court, appellate division, fourth department, November 30, 1921 (191 N. Y. S. 176). The court said:

"The common law rule in this state has, however, been abolished by the enactment in question for the very purpose of making that lawful which was theretofore unlawful, to permit a physical examination of a plaintiff where none was permitted before . . .

"It is urged, however, that there have been cases where infection has been caused by a needle puncture, such as is required to draw blood sufficient for a blood test. That is undoubtedly true, and in those cases the reason for the infection has been said to be the fact that the needle used was not properly sterilized, or that the skin had not been properly cleansed. Section 873 provides:

" 'Such examination shall be had and made under such restrictions and directions as to the court or judge shall seem proper.'

The court or judge granting the order is given full power to direct how the examination shall be made, and, upon the request of the plaintiff, may throw around the examination all known safeguards. The sample of blood should be taken by a physician selected by the plaintiff, if he so desires. It does not seem to me that under such circumstances it can be seriously urged that there is such danger that a court or judge is without jurisdiction to grant an order under section 873 for a blood test." Hayt v. Brewster, Gordon & Co., Inc., 191 N. Y. S. 176.

Possibly as the result of the situation created in New York by the recent decision relative to the admissibility of evidence based on blood grouping the New York legislature at its recent session enacted three statutes to govern the matter in the future. One amends the civil practice act by providing:

"Wherever it shall be relevant to the prosecution or defense of an action, the court, by order, shall direct any party to the action and the child of any such party to submit to one or more blood tests, to be made by duly qualified physicians and under such restrictions and directions as to the court or judge shall seem proper. The order for such blood tests may also direct that the testimony of the persons so examined may be taken by deposition pursuant to this article." Laws of New York, 1935, c. 196.

Another of the recently enacted statutes amends the law in relation to the inferior courts of criminal jurisdiction in the City of New York by providing:

"The court, on motion of the defendant, shall order the making of one or more blood-grouping tests by a duly qualified physician and the results thereof may be received in evidence." Laws of New York, 1935, c. 197.

The third act passed by the New York legislature amends the law relating to the support and education of children born out of wedlock and proceedings to establish paternity, by providing:

"The court, on motion of the defendant, shall order the making of one or more blood-grouping tests by a duly licensed physician and the results thereof may be received in evidence." Laws of New York, 1935, c 198.

In view of the progress that has been made in placing blood grouping on a secure scientific foundation, it seems probable the admissibility of evidence based on blood grouping will be universsally conceded. The question as to how specimens are to be obtained for examination, however, constitutes a separate problem in the law of evidence. Of course, a person whose blood is desired, or some competent person on his behalf, may consent to the taking of a specimen, and to this there can be no objection. In some cases, specimens will come to light in the course of examinations at the scene of a crime and examinations of the body or clothing of the victim or of the suspected offender. Specimens may be found of blood or of secretions, the examination of which may yield results similar to those obtained from blood, which have been accidentally deposited by the person from whom they come or such specimens may be obtained surreptitiously. But if specimens do not become available in any of these ways, can the court require a party to the proceeding to submit to the taking of specimens for examination? The rule will certainly vary as between civil proceedings and criminal proceedings and in the various federal and state courts. In civil proceedings, if the court orders that a party submit to the taking of a specimen of blood and the party refuses, and if the judgment of the trial court is sustained by the appellate courts of the same jurisdiction, then there is a way of disposing of the controversy by punishment of the recalcitrant party for contempt of court or by the dismissal of the proceedings, as circumstances may indicate. In a criminal case, however, the dismissal of the prosecution would be exactly what the defendant most desired, and the prospect of a dismissal would encourage him in his refusal to submit to the taking of a specimen of blood instead of encouraging him to consent. Moreover, the defendant in a criminal case has a constitutional right to refuse to bear witness against himself, so that it seems unlikely that any court will undertake to punish such a defendant for contempt of court for refusing to give up some of his blood in order to facilitate his conviction and punishment. This right of the defendant is conceded, it will be noted, in the New York statute which authorizes the making of blood grouping tests in criminal cases only on the motion of the defendant, and says nothing as to the right of the prosecution. Whether in this case, in event of the failure of the defendant to make such a motion, the prosecuting attorney or the court could comment on that fact in order that the jury might draw inferences from it is a question that would take us too far afield for discussion here. The constitutional right of a defendant to refrain from bearing witness against himself is not as clear as the language might indicate, for it seems

to be well established that a court may require a defendant to stand up, or to put on a garment or to take off a garment, in order to facilitate his identification by a witness. Some bold judge may some day go so far as to undertake to compel such a defendant to submit to the taking of blood specimens.

Whatever other States may do, however, the rule in Illinois seems to be clearly opposed to any compulsion in the making of any physical examination of any party to the case. This rule runs back to 1882, when the Supreme Court of Illinois, in a personal injury case, *Parker v. Enslow,* 102 *Ill.* 272, said:

"Complaint is also made that the court refused to compel appellee to submit his eyes to the examination of a physician in the presence of the jury. There was no error in this. The court had no power to make or enforce such an order." Parker v. Enslow, supra.

And from that time on—except in cases litigated under the workmen's compensation act, which are provided for under a special statute—it seems to have been the uniform practice of the courts in the State of Illinois to refuse to order any physical examination of any party to a controversy before them.

And paradoxical as it may seem to be, it is not improbable that the rapid advances that have been made and are being made in blood grouping tests will serve to delay the admissibility in court of evidence based on such tests. It may readily be argued that a scientific procedure that is as yet so insecurely established that new blood groups are being added to the list at rather frequent intervals is not on a basis sufficiently firm to enable courts and particularly juries to comprehend the significance of the processes involved, and if an effort is made to explain them on the basis of Mendelian laws, the situation is likely to prove worse than hopeless. As was suggested by the Supreme Court of Wisconsin, supra, with respect to the lie detector, so also with respect to blood grouping tests at the present time. The introduction of evidence based on such tests might lead to a trial of the principles and practice of blood grouping rather than to a trial of the issue before the court.

1. Zeitschr. f. Immunitäts, 6: 284, 1910... ....
2. Klin. Woch., 3: 1495, 1924.
3. Hooker and Boyd, Jour. Crim. Law, 25: 187, 1934.
4. Landsteiner. J. A. M. A., 103: 1041, 1934.
5. Northwest Reporter, 252: 7, 1933.
6. Pennsylvania District and Circuit Reports, 17: 229, 1931.
7. New York Supplement, 271: 277 and 272: 165, 1934.
8. New York Supplement, 269: 799, 1934.
9. Allegheny County Court, 1935.

BRONCHOSCOPY IN LUNG DISEASE WITH SPECIAL REFERENCE TO ATELECTASIS

CHARLES D. SNELLER, M.D.
PEORIA, ILL.

The possibilities for improvement in the diagnosis and treatment of lung diseases have barely been touched upon in our section of the United States as compared with selected eastern cities.

Read before Section on Eye, Ear, Nose, Throat, Illinois State Medical Soc., May 21, 1935.

Most of us who do bronchoscopy realize this, but we have not done all we could in proving to others that bronchoscopy may frequently be a great aid in the diagnosis of many obscure lung conditions and is a method of treatment of many of these, more efficacious than others already in use.

Lest we forget, a bronchoscopist is not an entity in himself. He is rather one who is dependent upon others,—the family doctor, the internist, pediatrican, and the roentgenologist. One or more of these men have seen the patient first, heard his story, have made physical findings and, in most cases, have treated the patient for days to months. Because symptoms fail to improve or the patient is unable to recover from them under the treatment utilized or because of serious complications arising in the course of the case, the bronchoscopist is called in consultation.

He must then evaluate the various symptoms and facts of the history. Cough may have been present most of the time, or only spasmodic, productive or non-productive, simple or critically severe. Dyspnea may be present occasionally or continuously, simple or threatening the life of the patient. It may be associated with ashy gray pallor about the patient's mouth or with the actual cyanosis of heart failure. There may be hemoptysis, blood tinged sputum or considerable pulmonary hemorrhages. Wheezing, (asthmatoid) heard over the open mouth, may be present all the time or spasmodically. The patient may be losing weight, have afternoon temperatures and have increasing weakness. One or more of these or other symptoms, the bronchoscopist hears about. He has the consultant's well thought out judgment to aid him. The internist or pediatrican has ruled out tuberculosis and pneumonia and now presents his physical findings. These findings may in themselves be non-diagnostic and, therefore, only an aid to the bronchoscopist.

Next we come to the x-ray, perhaps the most important single diagnostic armamentarium in many early and some unusual cases, but it is of some value in most cases of lung disease. Stereoscopic or simple, P-A flat plates are of much value. In early cases of obstructive emphysema and in obstructive atelectasis (so common in so many cases of lung disease at one stage or another) can best be detected by making two

plates, one at the end of expiration the other at the end of inspiration. Obstructive emphysema is intensified in the expiratory phase while obstructive atelectasis, even of comparatively small portions of a lobe, are intensified in the inspiratory phase.

Obstructive Atelectasis. Perhaps the most frequent finding which presents itself to the bronchoscopist is atelectasis. It is most easily detected by the x-ray. It may involve a part of any lobe, any one of several, or an entire lung. If it involves both lungs, it is fatal. It may involve several portions, of different or of the same lobe, such as the case in which several small plugs of secretion obstruct various secondary bronchi. Small areas of atelectasis may clear up without treatment while others are becoming plugged, thus changing the picture from day to day. The etiology of atelectasis is protein. Plugs of tenacious, thickened or dried mucopurulent secretion, act as plugs in the bronchi in the same manner as foreign bodies. This is the etiology in postoperative collapse or postoperative massive collapse, the so-called "ether pneumonia." Plugs may shift from bronchus to bronchus the same as foreign bodies may. Granulomas, tracheobronchial tumors, carcinomas, etc., sooner or later cause atelectasis peripheral to the growth when complete plugging of a bronchus takes place. Complete compression of a bronchus from enlargement of parabronchial lymph glands, tumors of the parabronchial or mediastinal tissues, cause atelectasis. Eventually drowned lung and pulmonary abscess result in the involved lung.

The *treatment* of atelectasis varies somewhat according to the cause. Small atelectatic areas may clear up by the use of carbon dioxide and oxygen. If the bronchial secretions are dry, the steam tent may be a most valuable adjunct. When an entire lobe or a lung is involved, treatment by the steam tent, postural drainage (with the foot of the bed elevated and the patient on his uninvolved side), and carbon dioxide used for five minutes at hourly intervals, are at times valuable. Five to thirty percent. carbon dioxide may be used depending on age and case. However, the most definite and certain of all methods is that of *bronchoscopic aspiration or removal* of the obstructing object. Medical treatment is of much value even after bronchoscopic treatment has cleared the major and secondary bronchi. Many times repeated bronchoscopies are necessary for removal of forming plugs. A soft rubber catheter inserted at frequent intervals, through a tracheotomy tube, when this has been necessary, may be directed into either of the major bronchi and secretion aspirated before it has had time to form plugs.

Cases of *atelectasis and lobar pneumonia* may simulate each other. X-ray reveals the difference. In atelectasis the lobe involved has collapsed, not consolidated. The mediastinal structures are pulled toward the atelectatic side but not so in lobar pneumonia. The next two case reports, selected from a large group, represent the simpler and the severest types of obstructive atelectasis treated as "suspected pneumonia."

Case 1. A child 20 months of age was treated two weeks for a *suspected pneumonia.* After severe coughing spells and attacks of intense dyspnea and cyanosis, an x-ray revealed an obstructive atelectasis of the right middle lobe. After removal of a kernel of corn by bronchoscopy, tracheotomy, medical treatment and several more bronchoscopies for removal of dried plugs of secretion, the patient's lung became clear,

Diagnosis: Obstructive atelectasis caused by vegetable foreign body.

Case 2. Patient 3 years of age had been treated for suspected pneumonia for two weeks. At the end of the second week the patient had a sudden attack of violent coughing followed by extreme dyspnea and marked cyanosis. Temperature to 103; pulse 160; respiration 56. Twenty-four hours later x-ray revealed atelectasis of right lower lobe and a massive collapse of entire left lung. A working diagnosis was made of a foreign body which had been present two weeks in right lobe bronchus and had been loosened into trachea and reaspirated into left main bronchus, thereby the cause of the massive collapse. At bronchoscopy a kernel of corn was removed from the left main bronchus. The bronchial mucosa was much thickened but air rushed into the lung upon removal of plug. Much thick tenacious secretion was aspirated from right lower lobe bronchus. This was followed by a rapid convalescence of the case.

Diagnosis: Obstructive atelectasis simulating pneumonia and massive collapse of one entire lung caused by vegetable foreign body.

Massive Collapse. The exact nature of the so-called *postoperative* atelectasis or "ether" pneumonia has been established for some time, but the most certain and scientific method of treating this condition has been recognized only a very few years. It is true that by medical treatment a certain percentage of cases will recover, but it is only by *bronchoscopic aspiration*

that the highest success is reached in their treatment.

The following are selected cases illustrating the case not bronchoscoped, the one bronchoscoped and the one in which diagnosis was overlooked.

Case 3. A male 28 years of age was operated on (herniotomy), nitrous oxide ether anesthesia. He had had a chronic bronchitis for many weeks. Thirty hours after operation he became very restless, was dyspneic and developed temperature 103-104 degrees. A diagnosis of beginning massive collapse, right, was then made. The patient insisted upon lying on his involved side. Upon being turned onto his normal side, he almost "strangulated" on nearly a half tea cup of thick, viscid, purulent yellowish sputum which was suddenly coughed out of the bronchial tree. It was decided to wait 24 hours before doing a bronchoscopy. During this time CO_2 and O_2, postural draining, forcing fluids and elimination of narcotics (which had been freely administered before) were carried out. On the fifth day the lung was clinically cleared.

Diagnosis: Early post-operative atelectasis.

Case 4. Age 28 years, had appendectomy under ethylene. Nine hours later dyspnea, temperature and x-ray revealed early postoperative collapse. By the end of the second day the temperature rose to 103 degrees with much cough and expectoration of yellowish mucopus. The respiratory and pulse rate rose to 44 and 120. A bronchoscopy was done because treatment did not change the course. Temperature fell rapidly and the lung cleared by the end of the fourth day postoperative.

Diagnosis: Early postoperative atelectasis.

Case 5. Male, aged 30 years, had herniotomy under gas-ether. Eighteen hours after operation temperature was 103.6; pulse 120; respiration 38, after sudden onset of dyspnea, cyanosis and violent coughing. After one hour condition improved a little. X-ray and physical findings indicated a postoperative collapse of the right lower lobe. The next day a bronchoscopy was done because medical treatment did not improve the clinical course. Much thick yellowish bronchial secretion was aspirated from the trachea and larger bronchi and plugs were removed from the right main bronchus. The patient had an almost immediate recovery.

Diagnosis: Postoperative lung collapse.

Case 6. Male, 44 years of age, was operated on for ruptured gangrenous appendicitis. This was followed by peritonitis with septic temperature, rapid pulse and respiration. It was thought at the time that the patient had developed a pneumonia during the first 10 days postoperative. The diagnosis, however, made later from early x-ray plates was postoperative collapse. Sometime within four months after operation, a lung abscess developed in the atelectatic right lower lobe, followed by adhesions to the diaphragm and parietal pleura. Two bronchoscopies were done. Bronchi were dilated and pus aspirated. The patient did not improve and five months postoperative a rib resection with drainage was resorted to. The patient was in good condition three months after the rib resection but not entirely recovered.

Diagnosis: Unrecognized postoperative collapse followed by lung abscess.

CARCINOMA

Chevalier Jackson says "it is now generally accepted that the bronchoscope affords the only means of making an early and positive diagnosis of malignant disease of the bronchi and lungs." Any person with a protracted cough or expectoration, not proven to be tuberculosis, should be permitted a diagnostic bronchoscopy. There are no symptoms characteristic of early or late bronchial malignancy. Early cough with some expectoration, asthmatoid wheeze, occasionally hemoptosis, and later, the symptoms of pulmonary sepsis, are not diagnostic but rather suggestive. The x-ray diagnosis is important but the bronchoscopic biopsy is the only positive and final factor in the diagnosis of bronchial malignancy.

In 117 cases reported by Andrus in the Chest Tumor Registry, (J. Thoracic Surg. Feg. 1935) there were 64 cases where the diagnosis of primary carcinoma of the lung was considered as established. Only 15.5% were under 40 years of age. In 84% of cases, poorly localized pain or pain of pleural type, cough and dyspnea (in both massive effusion and bronchial compression) were the chief presenting symptoms. There was bloody sputum in 12% of cases. The loss of weight in these patients was very considerable.

Physical findings of the chest showed little of diagnostic value except in late cases and these were already hopeless. In 87% of cases the x-ray gave definite evidence of pathologic condition. Some operative procedure was done in 30% of the cases resulting in one case living at the end of the second year and a case in which lobectomy was done was well three years later.

This review emphasizes the need for earlier diagnosis. This can be accomplished only by the freer use of the bronchoscope, especially in cases with early atelectasis.

All cases of carcinoma of the bronchi and lungs are sooner or later complicated by atelectasis with the subsequent pulmonary suppura-

tive disease,—abscess, pleural effusion, empyema, gangrene of lung.

The following are two selected cases of late unrecognized carcinoma of the bronchi and lung.

Case 7. A woman 67 years of age, apparently in good health, had a sudden pulmonary hemorrhage while visiting in a distant city. This was arrested under general treatment. About six months later she sought her family doctor because she did not seem to be recovering from "protracted cold." At this time he heard bronchial breath sounds and "sibilant" rales over the entire right chest. An asthmatoid wheeze was present. X-ray showed a massive collapse of the entire right chest. At bronchoscopy a fungating carcinoma. bleeding easily on contact, filling the entire right main bronchus up to the carina. A section under microscopic examination showed adenocarcinoma of bronchial origin. An autopsy three weeks later showed an extensive invasion of the peribronchial and lung tissue.

Diagnosis: 1. Adenocarcinoma of bronchial origin. 2. Massive collapse right entire lung.

Case 8. A male 52 years of age, first noted, May, 1932, that he became exhausted easily, at times had some difficulty in getting his breath and had developed a left side wheeze. Some days he was free from the wheeze and at others he thought he heard a "whistle" in his lung. Six months later he suddenly became chilly, very weak and dyspneic and was sent to bed. A diagnosis of left sided pneumonia was suggested. He was in bed for six weeks before admission to the hospital. He was expectorating large amounts of foul pus. X-ray revealed a massive collapse of the entire left lung. At bronchoscopy a spherical mass, grayish in color and rather smooth, was seen attached by a pedicle to the left main bronchus about 1½ cm from the carina. Microscopic section was that of (adeno) carcinoma of the bronchus. The patient expired three weeks later.

Diagnosis: 1. Massive collapse left lung. 2. Abscess left lower lobe. 3. Carcinoma of left main bronchus.

Case 9. Male, aged 47 years, had some cough and expectoration followed by pain in the left scapular region. Within five weeks he developed fever and night sweats, lost much weight and sputum became bloody. During the sixth week he had a sudden attack of extreme cyanosis and dyspnea lasting nearly two hours. He complained of some substernal ache. He continued to lose weight and strength. At bronchoscopey, ten weeks after the apparent onset, a considerable lateral compression of the lower trachea, and a complete compression of the left main bronchus, total about 2 cm from carina, were seen. No tumor was visible but after bronchoscopic aspiration the right upper lobe appeared clearer under fluoroscopy. Two days later the patient expired from a severe pulmonary hemorrhage. Autopsy revealed atelectatic and gangrenous areas throughout the left lung. No malignancy was evident on gross examination, but was strongly suspected.

Diagnosis: Massive callopse from external compression of main bronchus caused by parabronchial growth.

In conclusion it is the purpose of this paper to reemphasize that bronchoscopic examination is indicated—

1. In all cases with protracted cough or expectoration in which tuberculosis has been ruled out.

2. In all cases of obstructive atelectasis. Medical treatment is of some value in many of these cases but is not diagnostic.

3. In all cases of asthmatoid wheeze or simple "wheeze."

4. In all cases of blood tinged sputum or hemoptosis not proven tuberculous.

5. In all cases of dyspnea and cyanosis not proven to be due to heart disease.

If bronchoscopic examination is carried out early, we shall be better able to determine the cause and to treat atelectasis. We shall, thereby, prevent many cases of lung suppuration. Early bronchoscopic diagnosis and removal of the growth is our only hope in malignancy of the bronchi.

Jefferson Building.

DISCUSSION

Dr. Charles D. Sneller, Peoria (closing): I am very sorry to have chopped off my paper in this way, due to lack of time. I would like to say that the field of bronchoscopy is hardly touched outside of Chicago or any of the larger cities, and most of the cases have to do with foreign bodies. I think if we should all help out in this missionary work, 95 per cent. of our cases would be done for treatment and diagnosis of lung conwitions, rather than be confined to foreign bodies.

THE TECHNIC OF ORCHIDOPEXY

J. S. EISENSTAEDT, S.B., M.D., F.A.C.S.
CHICAGO

Seven years ago I had the opportunity of reporting the end results in a series of patients operated upon for non-descent of the testis. At that time the operative technic was detailed and the complete conservation of the spermatic vessels was emphasized. Our results then were reported as generally satisfactory. The testis was in the scrotum in all cases, in 60% in the lower third and in 40% in the middle third. In no case was the testis situated above the middle third of the scrotum. There was no case of atrophy in the series. A marked increase in the size of the testis was reported in all cases. There was no

From Department of Urology, Michael Reese Hospital Chicago.

case of recurrent hernia, though in all cases a hernial sac was present. In 85% the sac was excised. Since then a much larger series has been operated upon with increasingly good results. Seventy-eight cases were available for follow-up. The testis was in the lower third of the scrotum in 63%; in the middle third in 37%; in no case was the testicle above the middle third of the scrotum. A marked increase in the size of the testis was noted in all cases but one. There was but one case of atrophy, and this occurred in a negro of 37 years, who had both testes within the internal rings. There was no case of recurrent hernia.

Fig. 1 shows the anatomical relationships after the skin and external oblique have been cut.

The operation done at that time was a modification of the Bevan operation, and as Wangensteen says, "The modern operation as it is known today is indelibly linked with the name of Bevan and is largely the result of his efforts. He has stressed particularly the fact that the separation of the vaginal process from the other elements of the spermatic cord combined with the removal of the coverings of the cord, will so mobilize the testis, that in most cases it may with ease be placed into the scrotum."

In my last paper on this subject the importance of the above-mentioned procedure was called attention to and minutely followed. I also stated that after one has made sure that these fibrous bands have been satisfactorily disposed of, the little finger is passed within the internal ring and gently frees the cord from any "adhesions" holding it. Other strands may also be brought into view where they may be cut. This maneuver I consider important and it should always be done if the previous cutting and teasing apart of the strands within the length of the canal will not permit the complete descent of the testis." Other details of the completed operation will be discussed below.

During the past several years, many excellent contributions on this subject have appeared and several series of splendid operative results have been reported.

It is not my intention at this time, to take issue with those authors advocating fixation of the testis or the gubernaculum to the thigh but rather to indicate certain points of similarity, in recent contributions, relating to the essential points of operative detail.

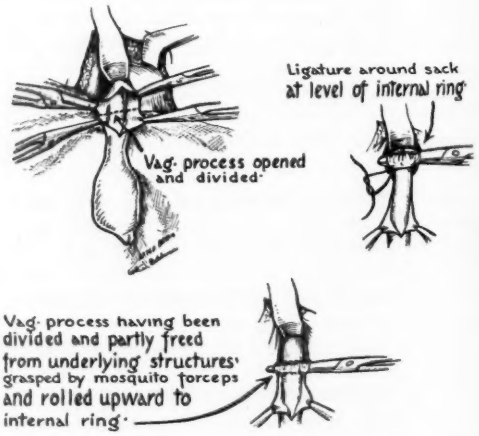

Fig. 2 presents the various procedures for separation of the processus vaginalis from the underlying structures of the cord.

Burdick and Coley say, "in the simple cases the separation of the 'adhesions' about the internal ring will give sufficient length to the cord, to place the testis well toward the bottom of the scrotum without tension. In the others the

various fascial bands about the cord will have to be cut."

Wangensteen states, following Bevan, that the initial step in lengthening the spermatic vessels is the separation of the hernial sac. The fascial coverings are then teased and cut. It has also been his experience that freeing the spermatic cord well into the retroperitoneal space using the fore finger as a dissector, is a most valuable maneuver in gaining additional length. The legend under Figure 8 illustrating his excellent paper reads: "If the testis still cannot be brought into the scrotum because of the inadequate length of the vessels, the internal oblique and transversalis muscles are cut across. Splendid exposure of the retroperitoneal spermatic vessels is obtained by pulling the peritoneum medially at the upper end of the wound with a large retractor." The above is absolutely true in my experience, however this technic has the disadvantage of weakening the abdominal wall by cutting through the muscular part of the internal oblique, and may predispose to incisional hernia.

Cabot similarly emphasizes the advisability of freeing the cord from strands within the internal ring and likewise inserts his finger into the retroperitoneal spaces using it as a dissector. He does not cut any of the tissue at the internal ring.

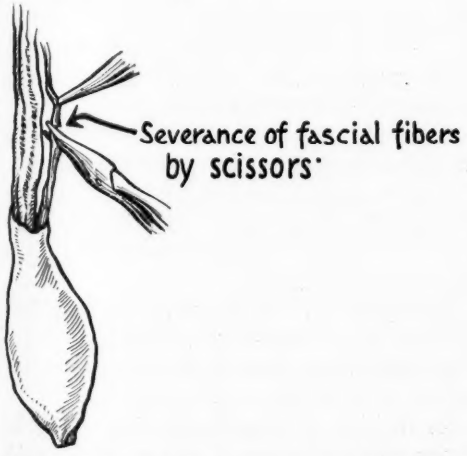

Fig. 3 shows a method of severing the fascial fibers applicable in many instances.

My concept of the operative correction of cryptorchidism had undergone but very little alteration during this interval, and until August of last year very little change had been made in technic. Fixation of the testis or gubernaculum to the thigh has never been done and severing of any part of the blood supply of the testis likewise has never been necessary.

An excellent article by Dr. Browne[1] afforded me a new point of view.

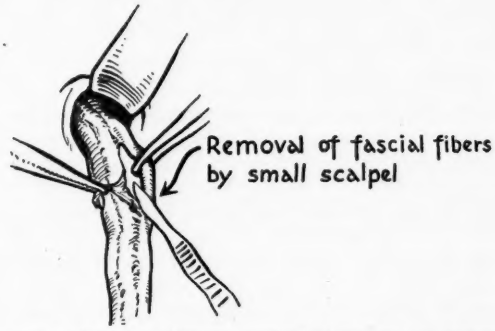

Fig. 4 shows an alternate method of removal of fascial fibers.

His contribution, based on interesting anatomic research, gives an explanation for what I believe one should attempt to accomplish in the operation for undescended testis. He sought for the structure which supports the testis when the cremaster and dartos muscles are relaxed, and says the following:

"To find out whether there actually exists the structure which has been deduced from the combination of the body and the mechanics of the problem, two incisions are necessary, the first is the ordinary midline one that opens the peritoneal cavity and lays bare its posterior wall. Then when the action of gravity is imitated and exaggerated it is seen that the strain of this drag passes up along the cord past the internal ring to radiate over the exposed posterior wall. The main stress comes on fibers which can be seen and felt beneath the peritoneum, running upwards and outwards from the convexity of the curve described by the spermatic vessels in the iliac fossa, but the pull is felt far above this and even the kidney moves with it. The peritoneum, of course, moves with the shifting of the structures beneath it, but is far too flimsy and extensible to withstand the strain; the structure which is sought must lie beneath it. To show this structure a second incision is made. This incision divides the entire muscular abdominal wall from the lumbocostal angle to the scrotum, opening that line of cleavage which lies directly beneath the muscles and which the surgeon uses in the extraperitoneal approach to the ureter or iliac vessels. There is isolated a layer of fibrous tissue which is apparently continuous around the whole body. Above it becomes thick and fatty to ensheathe the kidney, below this the ureter and spermatic vessels run in its substance, at the internal ring a prolongation of its fibers accompanies the spermatic vessels through the inguinal canal down to the testis. It is this prolongation

whose jaw-shaped upper end was demonstrated through the intact peritoneum by pulling upon the cord and which normally takes the weight of the testis off the vessels and the vas when the suspensory muscles relax."

I have dissected several cadavers of fetuses and still-born children and have proved to my entire satisfaction the truth of Browne's description of his observations.

Browne further states:

"In the operation for undescended testis the suspensory fibers must be deliberately and delicately isolated where they spread out in a fan shape from the spermatic vessels at the internal ring. This fan can be felt running upwards free between the peritoneum on the inner side and the muscles on the outer. The veins are carefully defined on its inner edge and it is divided piece-meal. The final step in lowering the testis is a similar cautious division of the band which maintains the angle of the vas and the spermatic vessels at the internal ring; when this is done the deep epigastric vessels are no obstacle to the complete shifting inwards of the cord and consequently there is no need to divide them as Davison recommends."

This latter suggestion I have also applied in the last three or four operations and concur also in the usefulness of this procedure. In certain cases obviously complete adherence to this technic is not necessary but for the more difficult ones it is highly satisfactory and a welcome addition to our previous technical details.

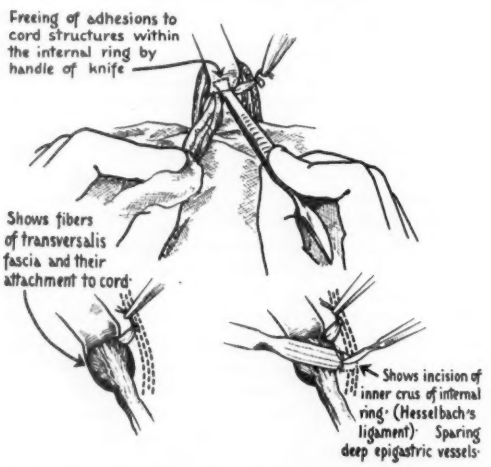
Freeing of adhesions to cord structures within the internal ring by handle of knife
Shows fibers of transversalis fascia and their attachment to cord
Shows incision of inner crus of internal ring (Hesselbach's ligament) Sparing deep epigastric vessels

Fig. 5 shows the necessity and method of freeing structures within the internal ring as well as the occasional requirement of severing the internal crus. Note sparing of the deep epigastric vessels by cutting upon a Kocher director placed above them.

The term adhesions which other contributors and myself have so frequently used to describe the fibrous strands of the abdominal connective tissue, which are attached in a fan-like way to the cord is obviously a misnomer as these strands are from a normal connective tissue layer and are not of pathologic origin.

The band at the internal ring to which Browne refers is Hesselbach's ligament and conforms perfectly with Hesselbach's original illustration of this region.

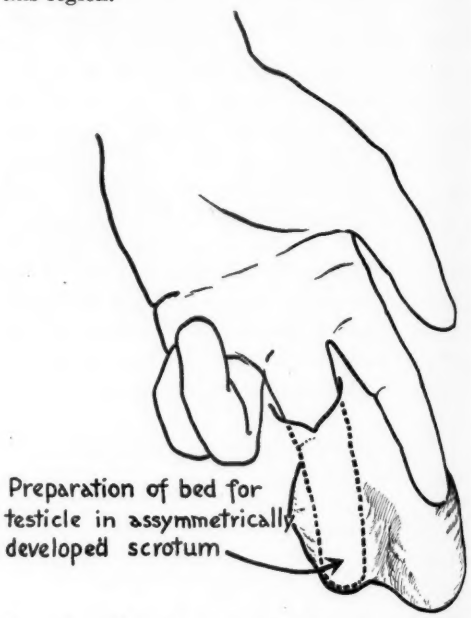

Fig. 6 is self-explanatory and shows the preparation of the new bed with the testis in the scrotum.

To summarize, our operative technic consists of the following essential points:

1. Freeing the hernial sac from the other elements of the cord and its proper disposal.

2. Freeing the vessels and the vas deferens from all fascial coverings, which include strands from the intercolumnar, infundibuliform fascia and cremasteric muscle.

3. Separation, when necessary, of the cord from all suspensory strands of the abdominal connective tissue layer, both at the internal ring and within it in the retroperitoneal space.

4. Division of Hesselbach's ligament at the inner crux of the internal ring in cases in which adequate length of the spermatic vessel is not obtainable without this procedure.

5. Preparation of an adequate bed in the poorly developed asymmetrical scrotum.

6. Closure according to Andrews with attention to the proper placing of the purse-string

suture overlying the cord; closing off the upper part of the scrotum.

In certain cases we have observed the testis retained below the external ring and have in these instances been able to determine the presence of fascial pockets as described by McGregor.

Certain authors have observed that some months after operation, a testis which at the time of the completion of the operation, lay in the lower third of the scrotum, may be found at a higher level, even reaching the upper third of the scrotum. For this reason they feel that a two step operation is required; the first step consisting in freeing the cord structures and eventually suturing the testis or gubernaculum to the fascia on the inner surface of the thigh. It has been my observation that occasionally a testis will ascend from its low lying position in the scrotum during the first few months after operation but, as a rule, in a year or two, coincidently with the growth of the organ, it has been found at its original postoperative level low in the scrotum.

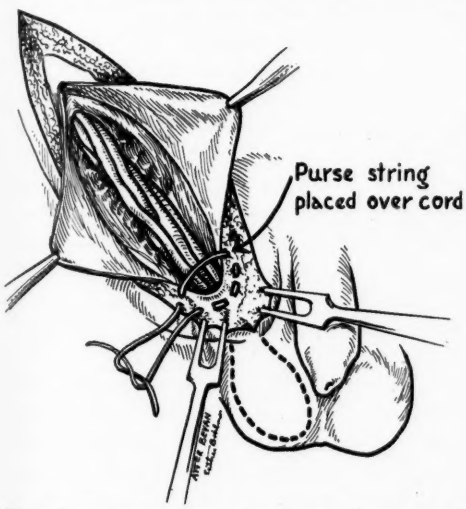

Fig. 7 shows the method of closure after Bevan and the anatomical relationships at this stage of the operation.

It may be of interest to note that as high as 10% of atrophy of the testis has been reported following the Torök technic. Tyrell, who uses a fixation technic, says in cases of poor results insufficient mobilization was the cause. His series showed 66% of excellent results, 10% good, 16% poor and 10% of atrophy.

It is my firm conviction that complete mobilization is the essential part of the operation and that perfect mobilization will assure a satisfactory operative result. Obviously perfect mobilization and fixation will also render excellent results. But incomplete mobilization and fixation of whatsoever type used will not afford uniformly satisfactory results.

Recently the much heralded use of anterior pituitary-like substances for nondescent of the testes has impressed many members of the profession, especially the pediatricians. I have made use of such substances in a group of cases which definitely showed evidence of endocrine disorder, such as adiposis genitalis. There is no doubt in my mind that such material should be tried in cases of endocrine dysfunction. In a certain group of patients the testes will descend late without any therapeutic help. In some of these patients the testes, though down in the scrotum, do not develop in size proportionately with the rest of the body. In these cases at, or shortly before anticipated puberty, anterior pituitary-like substances, I believe, are also indicated. I feel, however, that the use of endocrine products for the purpose of causing testes to descend should not be used indiscriminately in young patients of normal habitus, who show no deviation from the normal except the failure of one or both testes to descend into the scrotum. Their use in young adults of normal habitus past the age of sixteen or seventeen years, may possibly be attended with unsatisfactory results, because the rapid increase in size of an organ which is prevented mechanically from descending may lead to pathologic changes, as I have observed.

25 East Washington Street.

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THE GENERAL PRACTITIONER

TOM KIRKWOOD, M. D.

LAWRENCEVILLE, ILL.

This is not an eulogy on the family doctor. It is an attempt to analyze his present position in the social order, and in the medical profession. Is he necessary? What are his responsibilities to the public and to the profession? What is going to happen to him during the present social

President's address before Aesculapian Society of the Wabash Valley, 89th Annual Meeting, Paris, Illinois, October 31, 1935.

revolution, and what is he going to do about it —if anything?

Is he necessary? It seems to me that he is. I cannot conceive of any arrangement whereby it will be possible or desirable to eradicate him. He may under some new scheme be called a panel physician, et cetera, but he will still be a general practitioner just the same. After making out his reports and affidavits and what not, he may have little time left to practice the healing art, but he will be doing as well as possible under the handicap. He still exists—and exists is the name for it—under the various European systems where medical practice is in the hands of the State or is carried on by various health insurance agencies. However, under any plan which has so far been devised, the pubic seems to get the best service where the doctor is interfered with the least. It is apparently as impossible to legislate ability or efficiency into a man or a group of men, as it is to legislate a taste for liquor or narcotics out of the human family.

The marvellous developments in surgery, the specialties and in internal medicine during the last thirty or forty years have forced the general practitioner into the background. In 1888 bacteriology was not taught in any medical school in America, and the first x-ray was not made in the City of Chicago until 1898. The spotlight has been on these, and other newer phases of medicine, and the family doctor has been more or less forgotten. We hear that he, like the dodo, is a thing of the past; that he is a relic of the horse and buggy days, like our Constitution. They say that he is a man who knows less and less about more and more. Some have been sorry because he is supposed to be on the way out, but others have frankly stated that the sooner he disappears, the better it will be for all concerned. All have admitted that he is a unique specimen even if more or less useless. Be that as it may, his ranks have increased considerably since 1929 and meanwhile, in spite of all the wisecracks, he has continued to do by far the greater part of the medical work done in this country. Our morbidity and mortality rates in this country show that he has done this work very well. He will have to continue to do this work for many years to come. Medical men cannot be trained in a few months, so there is no one who can take his place. The social order may change his name but the same work will remain to be done, and the same men must do it. In this country the pauper is now called a client, so who knows how dignified and imposing our new title may be, if state medicine does come.

The family doctor is usually the first to see the emergencies in medicine and in surgery. His is the responsibility of recognizing such conditions as diabetic coma, uremic convulsions, coronary accidents, eclampsia, and various cerebral accidents. He is the first on hand at the numerous dangerous accidents of today. He must also recognize such emergencies as intestinal obstruction, appendicitis, perforating peptic ulcers, ectopic pregnancy, placnta pravia, strangulated hernia, and many others. What surgeon or other specialist, regardless of his ability, can do much for many of these conditions unless a prompt diagnosis has been made by the family doctor?

The contagious diseases are nearly all treated by the general practitioner and he will continue to treat or supervise the treatment of such diseases as diabetes, arthritis, and neuritis. He is the first who has a chance to see cancer and other malignancies, and upon his ability to recognize these at an early stage, depends the life of the patient. Upon his skill and ability rests the fate of the syphilitic. He is the first to contact such greater killers of humanity as pulmonary tuberculosis, cardiovascular and renal diseases. The safety of the patient in a great many of these conditions depends to a great extent upon the diagnostic skill of the family doctor who sees them first, and upon the adaptability of the system under which he renders his service. Under our present system the average emergency will be seen quickly and arrangements for treatment will be expedited. Under any state system of control, because of the associated red tape, things will be much slower. I have seen one patient with a service connected pulmonary tuberculosis, progress to an incurable stage while attempting to get into a government hospital. Another who, in my opinion, was entitled to treatment, was neglected to a point where in a rage, he committed a murder because he thought a man was causing him to lose a small job which brought in a few dollars a week upon which his family had to subsist. We have all seen the mental disaster caused by examiners who at one time tell an ex-soldier that he is 80% disabled, and a few months later tell him that he is perfectly able to

work, and then a year later reverse themselves and declare him again totally disabled.

Every general practitioner should strive to be a good diagnostician. When reasonably proficient in this art, he is in a position to know what he is treating, how long it is advisable for him to treat a disease before calling consultants, and when the patient should be turned over to a specialist, because it is no longer within his ability to properly handle the case. In these days many of us in general practice have the idea that it is impossible to make a diagnosis without using elaborate equipment and without depending to a great extent upon laboratory aid. McKenzie once said that whenever he saw a doctor loaded down with equipment on his way to examine a patient with heart disease, that he always wondered what he had done with what God gave him. Charles Mayo remarks that what a doctor has under his hat is far more important than what he has in his laboratory. These men are not belittling our modern methods in diagnosis. They are only trying to make us remember that after all we must depend upon ourselves, and remember that our laboratories are only furnishing part of the evidence. Our tests as a rule only help to confirm what we have clinically suspected. At times the evidence furnished by these tests is of great importance. It may also be very misleading. We must learn to give the evidence thus gained its proper place and must not minimize it on the one hand or place too much faith in it on the other. It is possible for the man in general practice to make the proper working diagnosis in the vast majority of cases which he sees. Most can be made without the use of elaborate equipment or complicated tests, but if such equipment or tests are needed, it is his business to know where to send the patient in order to get the needed service. At any rate he should remain in charge of, or in touch with his patient. The sooner he is willing to assume the responsibility for the welfare of the patient the sooner he will become indispensable in his community.

In many places it is impossible for the clinic or group idea to operate efficiently. In such localities, the local practitioner must assume the duties of the internist in the clinic, making use of his own observations and correlating the findings of various specialists to whom he may have to send his patient. He can thus give his patient most or all of the benefits of the clinic idea—and often at less expense. His ability to render this service will aid in forestalling state medicine. The specialist, if he is wise, will help the family doctor to render this service to his patients.

Experience is a great aid in avoiding diagnostic pitfalls but one able clinician has aptly remarked that some men often make the same mistake fifty times and call it "experience."

In most communities the family doctor is still the one upon whom the people depend for the prevention of disease and for advice during epidemics. The attitude of the general public towards preventive medicine and quarantine regulations depends to a large extent upon the caliber of the local practitioners. The attitude of the people towards prenatal care, maternal and infant welfare and the care of the growing generation depends on the ability and efficiency of the local medical man. People are reading nowadays and get a great deal of information and misinformation concerning medical matters from the lay press. If they see, or think, that their local doctors are not up to standard they are much more easily influenced by the advocates of state medicine.

Some of the doctor's responsibilities to the public have been enumerated above. There are others. He has always tried to protect the public from medical quacks. He must now endeavor to protect it from political quackery. He knows how gullible the public has always been so far as the medical quack has been concerned, and during the last few years has had ample opportunity to realize that the political quack can be just as dangerous as the medical one. We must also realize that many in our own ranks may fall for political promises.

What is going to happen to the general practitioner? This depends to a large extent upon what happens to the country from an economic standpoint within the next few years. If we have prosperity and everything is rosy, we *may* have little to fear in the immediate future. However, the time is coming for a showdown and, in my opinion, it won't be long now. The President has said that nothing will be done in the way of federal interference unless there is a crystallization of public sentiment in favor of it. At the same time those who are interested are right now furnishing to universities and high schools the material for debates on the subject of state

medicine or compulsory health insurance. It is quite evident that while nothing may be done in this direction unless the crystallization of public sentiment demands it, the powers in control are in a position to hasten this crystallization if political expediency demands it. So, if things do not improve, we may find that we are the next ingredient of the alphabet soup. The general public, so far, knows little and cares less about state medicine, and if it is harnessed upon us, it will be done by the politicians and big foundations. The politician will do it for votes and as a method of perpetuating his place at the public trough. If the invasion of the field of medicine will help to attain his ambitions, he will not worry about its effect on the medical profession or upon the public. The promise of free medical care should draw an enormous vote from certain elements of the proletariat and it is logical to expect most any kind of a promise from some of our present crop of politicians. Furthermore, the institution of some type of state medicine will open up a fertile field for appointments, and the opportunity to have new jobs for relatives, friends and followers is dear to the heart of most of our statesmen. The present setup is ideal for fastening compulsory health insurance upon our country. Numbers of newspaper men who are out of work are upon the federal payroll and can be used for any kind of propaganda. A good many medical men are in the same position. It is not likely that these men will bite the hand which feeds them. State medicine made its appearance in Germany in 1883 and in England in 1911. In both cases it was not due to public demand but came as a political expedient. It has not helped the public or the profession in any instance, but on the other hand has done great damage. After a thing has failed in Europe, it seems to be the general impression among our politicians that we should try to make a more impressive failure along the same line in this country.

The attitude of some of the foundations has always seemed a bit complicated to me. Here we have vast sums of money piled up by individuals who have certainly made enormous profits, often at the expense of the very part of the public for which they now feel so sorry. The profits have been large, for otherwise such sums of money could not have been accumulated. The fact that these sums are now available signifies that these philanthropists charged the dear public a tidy sum for services rendered. A handsome profit would have been possible even if the public had paid considerably less for what it bought. Would these philanthropists admit that the state could render the same services which they rendered to the public in a more efficient manner, or at a smaller cost? I hardly believe that they would, and if they did admit it, I would not believe it possible. These same philanthropists however constantly criticize *our* charges and *our* service and are working steadily to change the system under which we are now operating. In its place they too are seeking to substitute a system operated by the state or through some insurance substitute, and expect by doing so to eventually render the same type of service to one and all. The poor are to get the same attention as the upper classes. Did the poor, for example, get the same service as the rich from organizations controlled by Rosenwald or Filene? Only if it was paid for. The profits from foundation investments must be used to the best advantage to show results. If interference in the field of medicine makes the best appeal to the audience the founders or managers of some foundations will move in this direction. Perhaps some of our philanthropists feel a pang of remorse after having exploited certain classes in this country and seek to make restitution by paying them back at our expense. Perhaps this exploitation has something to do with our present predicament.

In Germany in the early stages of the game the doctors, as well as the public, were promised great things, such as shorter hours, steady income, old age pensions, less competition, etc. The same promises will be made to members of our profession in this country. To those who look only at the present these promises will carry great weight, and to these men it will be a difficult proposition to turn a cold ear to such promises. Those who are hard up for money, those who are inefficient, and those who are just starting into practice will be particularly interested in government work which will guarantee a steady income. After the change was made in Germany the doctor soon became one of the first forgotten men. His hours became longer and more patients were forced upon him during his working day. His pay was gradually reduced. The quality of services was stressed less and less

by the administrative officers, and the institutions, equipment, and management were played up more and more. The officials who controlled the vast machine occupied the limelight and gradually usurped the rights of the professional man. The doctor became a mere cog in the machine and he either had to mesh just right or get out. All of us who have followed the fortunes of our German colleagues know what happened to them. We also know that Germany is no longer the leader in the medical world, since the change was made and the inevitable gradually happened. We know too that the morbidity rate has increased by leaps and bounds in Germany under state medical control, and that the German doctor in general practice has had little incentive to improve himself.

In this country the same thing will happen on a larger scale. When one thinks about what will occur when we are at the mercy of a group of lay officials which will be changed with every change of political party, or which may become too firmly intrenched if one party remains long in power, it makes one realize that it is high time for us to do everything in our power to avert such a possibility.

The idea that the state will furnish any one better medical attention than that now available is fantastic. Today while mailing a specimen of blood to the state laboratory, I noticed on the card this request, "For reasons of economy, please do not ask for unnecessary tests." The expense connected with running a state laboratory is a drop in the bucket compared to what state medicine will necessitate. Under state medicine the citizens will at once demand all kinds of unnecessary services, and we will be swamped with minor ailments to the point where we will be unable to attend properly to more serious and important diseases. The expense of such services will be enormous. It is entirely possible that after a while this expense *will* force the state to limit its services to that which *is* absolutely necessary, and that some visiting nurse, case investigator or some ward politician will decide whether or not the service *is* absolutely needed. There is no reason why any one should expect any improvement in services under a politically controlled system of medical practice, for when politics enter, ambition and merit too often depart. The federal and state governments have examined, inspected and okeyed the banks of this country for years, but this did not guarantee first class service or protection to the people who used them. The Federal Reserve system was supposed to be able to prevent wild periods of speculation such as we had in 1929, but when the time came to put on the brakes, it was not politically expedient to do so. The legal proceedings in our courts have always been under government control. For years there has been an insistent demand for more speed and efficiency in our legal machinery in order that justice could at least be dispensed more rapidly and at less cost, but there has been little improvement in this field. Our army has never been prepared for war and, if critics are at all right, our air forces and navy are still in great need of improvement. In the face of all this, it is difficult to understand why anyone, without an axe to grind, should be so interested in turning medicine over to Government control.

If the doctor is like most officials, the rank and file of us will do what we have to do under any state scheme of medical care—and no more. In fact after we get all of our reports made out and our affidavits filed, we will probably be too tired to worry much about the quality of our services. During the World War I, for one, became fairly proficient at the art of loafing and several of my officers also became very skilled along this line. There was plenty of red tape to everything, but we soon found that it didn't pay to try to change things, because everything was just right as it was, and any suggestions made with the idea of improving conditions were more or less frowned upon. Once our field hospitals in the Bridge-head area across from Coblenz were running about 25% capacity while the evacuation hospitals in Coblenz were overflowing. We were only allowed to hold any patient for four days regardless of how mild his illness or injury might be. A Colonel from headquarters came over to inspect the hospital which we were running in Ehrenbreitstein and told us that headquarters had decided to take it over to take care of some of the overflow. One of my junior officers remarked that if our field hospitals could be allowed to hold some of the milder cases for a few days longer that we could immediately check the congestion in Coblenz. This was a perfectly feasible solution which had been discussed by the staffs of the several field hospitals. We had very good hospitals and a reasonably competent group

of officers and could have held most of the cases for any needed length of time. The reaction of this Colonel was very enlightening. He told the junior officer that he really should come over to headquarters and tell the army surgeon how to run his business. Suggestion to government officials are as a rule unwise and may even be dangerous if the official happens to be one of the type who takes himself or his position too seriously. There will be a lot of this for us to put up with if we are ever under state control.

A good example of the great interest which public officials take in the public was recently reported in one of the Chicago papers (the *Tribune*). Complaints against the municipal court there include: excessive costs in a court which was intended to be a poor man's court; involved rules, with all of which even the judges are not thoroughly conversant; the emasculation of the police courts, by the formation of special courts for practically every law violation; the hours litigants are forced to wait for tardy judges; the unkempt condition of the court rooms; and the lack of courtesy displayed by many of the attendants. The chief justice of the Chicago Municipal Courts says, "What can I do about it?" to critics of the courts. The judges are supposed to work five and one-half days a week. Each month each judge is supposed to report the number of hours worked per day and the number of days worked per week. However, some of them do not make these reports. The judges usually disappear altogether on Saturday mornings and during the racing, football, baseball, fishing and shooting seasons, they are also usually gone on Friday afternoons. The chief justice says he might stop a judge's pay, for neglect of duty, but that the judge can get it back by a mandamus action. The law provides that inefficient judges may be impeached, but that requires a two-thirds vote by the Legislature, and, says the chief justice, "That's a lot of trouble to take for such things, life is too short, you know, to act like that." An associate judge says that judges who wish to do their duty, and who see that things are wrong, are afraid to say anything, as any investigation brings all judges into contempt of the public, the lazy ones and efficient ones at the same time. The chief justice says, "Some of the judges may be lazy and some may take more vacation than they are entitled to, but what can I do about it?" Would not many of the complaints made about these courts and judges be applicable to situations which would appear under state medicine?

Under any scheme of the perfect state the government should also look forward to the time when every citizen shall have all he wants to eat and when his diet is carefully computed and balanced in Washington. We all know how important proper food is in the prevention of disease so why shouldn't our Government take over our facilities for handling and distributing this necessity? Proper clothing and housing are also of great importance and should be considered. And what about legal services? Everyone should be able to have a law suit is he wants one. It is expensive and difficult for some of our population to finance such legal proceedings, so provision should be made for free legal services for all. Fuel is needed universally, also, and should be provided. Almost all of us like to go places, or so it seems on Saturday nights and Sunday afternoons, so free transportation by means of an automobile in every garage, and free railroad tickets are in order. Plato considered most of our present problems many years before the Christian era. Like ourselves, he was unable to solve them.

What can we do about it? We can do something about it in several ways. In the first place we must keep the confidence of our patients, and in order to do this our services must be improved to the fullest extent. During this century medical services have been wonderfully improved. No other profession has advanced as rapidly. But we can do better. Each of us can individually improve his work. We can collectively improve our work. Our smaller county societies find it difficult to carry on because of small membership. Some of these counties should be combined so that a large enough group of medical men can be provided for an active society. Better programs can then be provided. These programs should be planned for several months or a year in advance, and should cover important advances in medicine and surgery. The fundamentals of medical science with which we should all be familiar should be reviewed. In many instances a society should attempt to provide a postgraduate course of instruction.

In the second place we must individually and collectively exert as much pressure as possible upon our politicians. We already have an or-

ganization which can be used very effectively to this end if our members will work. And we are now facing a situation where we will work if we have any idea of self-preservation. We have a man in every community who has some influence if he will use it. The foundations are putting out propaganda. The Government is doing it. So why should we hesitate? Our morbidity and death rates are lower in this country than in those where various schemes are now in operation, so why is it good for either the public or the profession to make any radical change? We have cleansed our own house since 1900 and improved our medical schools until they are the best in the world. No other profession has done this. To my way of thinking we are perfectly capable of solving this problem ourselves and we should insist on doing it.

Meanwhile we must take care of the unfortunates who are worthy of charity, but there is no reason for us to assume that it is our duty to take care of that element of the population which is tired of making an effort and has decided to let the Government look after it.

SUMMARY

1. The general practitioner will continue to do most of the medical practice in this country regardless of what changes take place.

2. He can be improved but not replaced.

3. This improvement must depend upon his own initiative and upon his own organizations.

4. His ability cannot be increased by legislation. His efficiency will be hampered by state interference.

5. The medical profession is a great temptation to social planners, professional altruists, social theorists, social exploiters and practical politicians. These men are now well prepared for an onslaught in order to gain control of our work.

6. State Medicine or Compulsory Health Insurance will be a political football and hence will accentuate present difficulties instead of curing them.

7. The present "Social Security Act" is an opening wedge. It calls for service to the blind, the aged, the unemployed, maternal and child health, crippled children, child welfare, vocational rehabilitation, and public health work. The expense connected with all of this will be something for even the present crop of magicians to think about.

8. Most of our present socialistic projects are possible only because of government credit, which in turn depends upon stored up wealth and national income. When this stored up wealth gets low and the national income fails to meet the bills, credit will disappear—and then how will we meet the expense connected with these "Security" Acts.

9. The general practitioner has a large enough load on his back at present without saddling any more experiments upon him. Let us not depend upon the promises of any party, but concentrate upon our own local representatives and senators.

1209 State Street.

CARCINOID TUMOR OF THE APPENDIX REPORT OF A CASE

WALTER W. ELLWOOD, M.D.
CHICAGO

In 1888, Lubarsch, who believed carcinoid tumor of the appendix to be malignant and primary, first described this interesting pathological entity. Later, Oberndorfer gave them the name carcinoids. The typical cells were first described by Kultschitzky in 1897, and in 1905, Schmidt restudied them. Since that time, the tumors have been studied by many investigators both here and abroad. As a result, the characteristic features were early worked out, but a great deal of controversy arose regarding the nature and origin of these tumors. The cells have a peculiar affinity for silver salts and reduce solutions of silver, thereby meriting a new name of argentaffine tumors. This feature has further confused the issue, because a new controversy arose as to whether or not the tumors are endocrine in origin.

Carcinoid tumors are now known to be benign. In 1911, MacCarthy and McGrath found only 22 cases of carcinoma of the appendix in the routine examination of 5000 appendices at the Mayo Clinic. Raiford reports 29 carcinoids of a total of 1611 tumors of the gastrointestinal tract from the Johns Hopkins Hospital, an incidence of 0.18%. There were 62,000 specimens of all kinds examined. The rather uncertain char-

Read before the Clinical Staff Meeting of the Edgewater Hospital, Chicago, Ill., April 2, 1935.

acter of this tumor remained in a confused state until the meeting of the German Pathological Society in Dresden in 1907, before which Oberndorfer discussed the subject in detail, and came out clearly and unreservedly for a separation of this tumor from true carcinomata, and placed them in their own group, and also proposed the name carcinoid. Carcinoids are found throughout the entire intestinal canal. Metastasis from tumors of the appendix are rare, but if they do occur are usually local to the cecum or terminal ileum. Metastasis will occur if the tumors arise from the stomach or large bowel.

Age Incidence, and symptoms. Carcinoid tumors are usually found in individuals in the third decade. The average age is twenty-five years. They grow slowly and give rise to no characteristic symptoms. This gradual growth produces a gradual obliteration of the lumen of the appendix giving rise to symptoms of acute appendicitiis. It is during the routine examination of appendices that the tumors are recognized. Acute attacks may subside, only to return at some later date. It is then, if not during the first attack, that the appendix is removed. The organ usually presents a bulbous enlargement of the tip which is very characteristic, and leads the operator to suspect some tumor mass. Sectioning the bulbous enlargement shows that the lumen is completly obliterated, and filled by a smooth clear mass presenting a yellow color. Metastasis may be present to the regional lymph nodes and rarely to the liver. The tumor may invade the lymphatics or blood vessels. The tumor mass arises from the submucous coat.

Histological appearance. The tumor consists of masses of spheroidal or polyhedral cells with granular or finely vacuolated cytoplasm. These cells are rich in lipoid similar to that found in the adrenal cortex, and it is to this that the yellow color of the tumor is due. The tumor cells are usually confined to the mucous and submucous coat, but they may reach the serous coat. Masson has carefully studied this subject, and there may be a relationship between carcinoids and the argentaffine cell neuromas which he has described. These neuromas consist of palisade, columnar, round or polygonal cells. There is a proliferation of the muscularis mucosa with vacuolation and fine granulation of the protoplasm. The granules of carcinoids are chromaffin, and the vacuoles are filled with doubly refracting lipoids. The droplets in the vacuoles stain bright red with Scarlet Red and Sudan. The droplets themselves are not doubly refractive but contain crystals which look bright with crossed Nicol prisms. The droplets probably consist of a mixture of neutral fats and cholesterol.

The walls of the vacuole contain lecithin. The granules stain black with iron hematoxylin like those of the adrenal medulla. The granules possess argentaffine and silver reducing properties. There is no possible identity between carcinoids and the adrenal paraganglion. The cells from which the carcinoids arise are the cells of Nicolas-Kultschitzky. There are five to ten of these cells in each gland of Lieberkühn where they are most numerous. The cells are conical, with either a round or oval nucleus. The Golgi apparatus is found in the supranuclear region, (Cordier). The basal region contains tiny granules which are acidophil, chromaffin, stain with iron hematoxylin, and reduce silver. The cells are and have endocrine function. The granules disappear on injection of pilocarpine.

Argentaffine cells enclosed in nerves result from intranervous budding from the glands of Lieberkühn. Migration is preceded by dislocation of the cells of the bud which, when liberated, seem to insinuate themselves between the nerve fibers. Carcinoid cell columns result from proliferation of intranervous argentaffine cells of neurocrine type. These cells, piled up in the nerve fibers, finally rupture their sheaths and infiltrate the interstitial tissue of the neuroma, then that of the submucosa. These neurocrine cells proliferate in the connective tissue and assume characteristic appearance of carcinoid cells. Proliferating in such an abnormal medium as connective tissue, the neurocrine cells group themselves like ordinary endocrine cells.

The intranervous argentaffine cells spring from the epithelium that lines the bottom of the Glands of Lieberkühn. The intestinal cells bud out and grow into the nerves. Here they become argentaffine. They differentiate into various forms: cylindrical cells grouped in rosettes or vesicles; cells of ganglion type; of Schwannian type; and neurocrine cells. The nerves containing them grow and become neuromata, or disappear if the cells themselves disappear.

REPORT OF CASE

Mrs. M. R. S., aged 28 years; fourth child in a family of 18, 14 of which are living today. The father

at 55, and the mother at 53 are living and well. She was born in Chicago and had the usual childhood diseases. There were no operations, fractures or accidents. The menses began at 13, were regular 28 day cycle for four days with no cramps or backache. The menstrual cycle increased to 30-31 days following the birth of the first child. She has been married for seven years, and is the mother of four children. On June 12, 1933, when full term, she had a severe pain in the lower abdomen which was mistaken for labor pain and she was rushed to the hospital. The pains disappeared and she went home. On June 13, 1933, the pains reappeared and she was delivered after a short labor of a male child. The next year, June 21, 1934, she was delivered of her 4th child. There were no complaints since her last baby was born. She began to menstruate two months later and was regular since then.

About ten A. M. on March 23, 1935, while working at home, she lifted a boiler of wash off the stove and immediately began to menstruate whereas she had just stopped flowing that morning. The previous period started Feb. 17, 1935 and continued for 5 days. She ate some cornflakes and a bowl of milk thereafter. About 11:30 A. M. she was seized with severe cramps in the lower abdomen, without vomiting or nausea. This attack resembled the one in June, 1933, but was greater in intensity. However, she kept right on working. She consumed a cup of tea and toast at noon. The cramps remained all afternoon without relief. At 6:30 P. M., she ate two pork sausage patties sandwiches with French fried potatoes. She felt tired a half hour later and this tired feeling persisted until 8:00 P. M. when she had a sudden severe and sharp pain in the right lower quadrant and she could barely walk. There was no nausea or vomiting. She went to bed, and the pains became lesser in severity. At 9:30 P. M. she vomited the supper meal. On examination soon after the temperature was 98.4, pulse 104. The physical was negative except for rigidity and tenderness over the right lower quadrant. A diagnosis of acute appendicitis was made, ice bags were placed over the abdomen, and she was given a sedative for sleep. She spent a very restless night. March 24, 1935, the temperature was 98.4, pulse 106, and the patient looked acutely ill. The white count was 21,200 with 90 poly's and ten lymphs. A vaginal examination was negative for anything in the pelvis.

At noon, March 24, 1935, she was operated upon. Through a right rectus incision, the appendix was located. The tip of the appendix was distended into a bulbous mass twice its normal size, and acutely inflamed and congested. The appendix was removed and the stump inverted. The right ovary was easily seen in the wound and contained a cyst about the size of a pigeon's egg. After some hesitation, the ovary was resected and the cyst removed. The abdomen was then closed in layers without drainage. On April 1, 1935, the sutures were removed and she left the hospital on the ninth day. Repeated examinations have found her in excellent physical condition, and a follow up done on July 26, 1935, shows her still in excellent physcal condition, and with no complaints.

Pathological examination of the tissues, done by Dr. I Pilot:

Gross Description: The appendix was 4cm long by 1cm in diameter. The wall is edematous; the serosa engorged. Sectioning shows yellow tissue in the mucosa and submucosa. The portion of the ovary shows a follicular cyst.

Microscopic Description: The lumen is narrow with the mucosa ulcerated. The submucosa and serosa are edematous and densely infiltrated with polynuclears. The mucosa and serosa present numerous islands of carcinoma cells of the small round cell type. There was no mitoses.

Pathological Diagnosis: Acute suppurative appendicitis superimposed on a carcinoid tumor of the appendix. Follicular cyst of the right ovary.

Comment. This patient had an attack of appendicitis at term which was erroneously diagnosed as the onset of labor. In all probabilities, the carcinoid tumor existed at that time. The attack precipitated the onset of labor on the following day, and after the delivery the appendiceal flareup disappeared. At the next attack, the appendix was removed and the carcinoid tumor discovered. The tumor gave rise to no special symptoms and was discovered on postoperative examination by the pathologist. This fact brings to our mind the great importance of a close cooperation between surgeons and pathologists at hospitals. The pathologist is ever ready to cooperate, but some attending men perhaps through a sense of being thought incapable, fail to bring their problems to the pathologist.

SUMMARY

1. A case of carcinoid tumor of the appendix is presented, and the important work of Pierre Masson on the subject is briefly discussed.

2. The tumor was discovered in the course of a routine examination of a specimen with typical acute suppurative appendicitis.

6471 Sheridan Road.

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QUALITY OF MEDICAL SERVICE

FRANK J. JIRKA, M.D.
Director, State Department of Public Health
SPRINGFIELD, ILL.

Contrary to opinions frequently expressed, there is no significant difference in the quality of medical service which physicians are able to render in one part of the state as compared with another. The medical profession in the big population centers is no better than that in the smaller communities and rural districts, so far as the general needs of the people are concerned. Hospital and laboratory facilities are generally more adequate in the larger cities but the ability of physicians to make a diagnosis, to successfully meet emergency situations and to prescribe appropriate treatment varies within remarkably narrow limits throughout the state.

These conditions seem fully justified on the basis of a series of studies recently completed by the State Department of Public Health. For this purpose the mortality over a five year period from four non-communicable diseases appendicitis, chronic nephritis, diabetes and tetanus, was studied. The state was divided in three almost equal geographical areas, the northern, central and southern.

For the five years, 1928-1932, inclusive, the average annual death rate, 17.3 per 100,000 people, from appendicitis in the northern area, which includes Chicago, was slightly higher than that in the central section, 17.1 and sharply higher than that in the southern, 14.1. The rate for 1933 was almost exactly the same in the northern and southern sections, 15.6 and 15.7, respectively, and only slightly higher, 16.9, in the central.

It is generally recognized that early diagnosis followed by prompt surgical treatment is the most effective way to control the death rate from appendicitis. In spite of the fact that hospital facilities are more adequate in the northern and central areas of the state, the southern section has the lowest death rate. While studies have shown that mortality from appendicitis is noticeably higher in certain states west of the Mississippi than in other parts of the United States, the reason ascribed is the lack of hospital facilities rather than a greater prevalence. There are no grounds for believing that the incidence of the disease differs greatly among people in different parts of Illinois. The evidence, therefore, indicates that physicians recognize appendicitis and prescribe proper treatment with as much success in the sparsely settled southern part of the state as in the metropolitan area along the shores of Lake Michigan.

Mortality from chronic nephritis has declined noticeably in Illinois since 1928. Improvement has taken place in all three sections of the state. In the northern section the rate fell from 126.5 per 100,000 people in 1928 to 97.7 in 1932 and 93.5 in 1933. For the southern section the corresponding rates were 109.9, 94.1 and 88.0. In the central section the rate fell from 130.2 in 1928 to 112.0 in 1932, but then went up to 115.7 in 1933. The rate in the central section has been persistently higher than in either of the other two but the downward trend in all three has been remarkably similar except for the 1933 upturn in the central section.

Age is probably as great a determining factor as anything with respect to this disease. Older people, no matter from what fundamental cause, are more liable to the disease than younger ones. The fact that the mortality trend has been so nearly the same in each of the three geographical areas indicates that physicians in each section know what they are about and recognize the disease with equal readiness.

While not communicable, diabetes varies in prevalence, considerably. Jews, for example, are more prone than gentiles to the disease. The dietary habits of a considerable proportion of city folks probably predispose to this ailment. Thus it was no surprise to find that a higher mortality from diabetes prevails in the northern and central than in the southern section of the state, the respective average annual rates for the five years being 25.2, 24.1 and 20.3. A sharp upward trend took place in the northern and central sections and a slight rise in the southern.

Here again the evidence indicates that physicians are equally able in the three areas to recognize and treat the disease properly.

The germs of tetanus are found principally in the soil and especially in garden soil fertilized by manure. The normal habitat of the germs is in animals, more particularly the horse. Humans become infected when wounds permit infected soil to get into the blood stream through the skin. In the light of these facts one would expect more tetanus under modern conditions in the sparsely settled areas where horses and cattle are found in the greatest number.

This is exactly the case. The average annual death rate per 100,000 people in the southern and central sections was 1.5 and 1.3, respectively, against 0.7 in the northern. A downward trend has marked the course of the disease in all three areas.

These studies show clearly that there is but little difference in the quality of medical service found in the different parts of the state. Physicians recognize diseases accurately, on the whole, and prescribe equally effective treatment. It is probable that patients will gain little or nothing by traveling great distances in search of superior medical talent except those few who are referred by local physicians to specialists. Most physicians know quite well their own limitations and are quick to refer patients to well qualified specialists when that is necessary for the best interests of the patients.

The statistical data upon which these conclusions are based appear in the accompanying table. The northern geographical section is made up of 33 counties, the central 35 and the southern 34.

DEATHS AND RATES PER 100,000 PEOPLE BY SECTIONS IN ILLINOIS

NORTHERN SECTION

	Tetanus		Diabetes		Appendicitis		Chronic Nephritis	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate
1933	24	0.4	1568	27.8	879	15.6	5276	93.5
1932	13	0.2	1549	27.7	854	15.5	5471	97.7
1931	35	0.6	1497	26.5	973	17.5	5674	102.2
1930	42	0.8	1261	22.8	963	17.5	5697	103.4
1929	50	0.9	1340	24.8	1000	19.0	6325	117.2
1928	56	1.1	1291	23.8	970	18.3	6684	126.5
*	196	0.7	6938	25.2	4760	17.3	ø9851	108.4

CENTRAL SECTION

	No.	Rate	No.	Rate	No.	Rate	No.	Rate
1933	12	1.0	291	25.5	194	16.9	1324	115.7
1932	18	1.6	315	27.5	190	16.6	1282	112.0
1931	12	1.0	277	24.0	217	19.0	1265	110.6
1930	18	0.6	260	ø2.7	218	19.0	1445	126.3
1929	14	1.2	260	22.7	171	14.9	1508	131.8
1928	14	1.2	268	23.4	181	15.9	1490	130.2
*	76	1.3	1380	24.1	977	17.1	6990	122.2

SOUTHERN SECTION

	No.	Rate	No.	Rate	No.	Rate	No.	Rate
1933	10	1.0	185	18.8	155	15.7	866	88.0
1932	10	1.0	215	ø1.9	125	12.7	924	94.1
1931	9	0.9	212	21.5	153	15.6	927	94.6
1930	14	1.4	186	19.0	145	14.8	1049	107.3
1929	17	1.7	189	19.0	127	13.0	1000	102.4
1928	22	2.3	191	19.5	137	14.1	1070	109.9
*	72	1.5	993	20.3	687	14.1	4970	101.6

STATE TOTAL

	No.	Rate	No.	Rate	No.	Rate	No.	Rate
1933	47	0.6	2044	26.3	1228	15.8	7466	96.1
1932	41	0.5	2079	26.8	1169	15.1	7677	99.4
1931	56	0.7	1986	25.7	1343	17.5	7866	102.4
1930	74	0.9	1707	22.3	1326	17.3	8191	107.3
1929	81	1.8	1789	23.9	1298	17.3	8833	117.5
1928	92	1.2	1750	23.7	1288	17.4	9244	124.9
*	344	0.9	9311	24.4	6424	16.8	41811	113.0

*Total number and average rate five-year period, 1928-1932.

CAVERNOUS HEMANGIOMA RADIUM TREATMENT

A. JAMES LARKIN, M.D.
CHICAGO

Definition and Occurrence on the Skin: Cavernous hemangioma is present at birth or appears shortly after as a raised, strawberry colored, compressible blemish. It grows larger in all dimensions during the first six to ten months of life. This strawberry or raspberry birthmark is composed of enormously enlarged thin-walled abnormal capillaries, arterioles, and venules. The lesion is seen most commonly on the face, forehead, scalp, arms, and chest and less commonly on the legs and buttocks. The size of the angioma varies from 2 to 3 cm. in diameter at the bluish elevated base with a red cap to such enormous dimensions as 10 or 12 cm. in diameter with a 2 cm. depth, often with an ulcerated central area which may ooze blood and serum.

Clinical Considerations: The smaller lesions on exposed portions of the body present a cosmetic problem chiefly. However, lesions as small as 1 cm. in diameter at birth present a gross cosmetic problem in adult life, if left untreated. The larger lesions present a serious menace in view of ulceration, infection, and susceptibility to trauma. The larger lesions may later be a part of permanent derangement of the circulatory mechanism of the involved part. This derangement seriously impairs function in the adult if an arm, leg, or an appreciable portion of the face is involved. In later adult life the venous enlargement leading to circulatory stasis with engorgement and edema resulting in marked disability follows the neglect of a caver-

nous angioma of size, especially in an extremity.

Deep seated or internal angioma is not commonly diagnosed except at operation or in instances of grave symptomatology resulting from the lesion. Co-existence of cavernous hemangioma and lymphangioma is occasionally seen about the mouth, usually involving the tongue, lips, or cheek. Angioma not infrequently involves the mucous membrane of either lip or cheek. The pathology may extend from mucous membrane to skin. It may be situated on the eyelids, the ear, the vulva, or it may involve the fingers or toes, completely surrounding them.

Radium Treatment: Radium treatment of cavernous hemangioma is completely successful in a high percentage of accessible lesions. The technique of choice is external, short distance, well screened radiation at regular intervals until the lesion has practically disappeared. The most important criterion for a successful outcome is early treatment—*before the age of three months, preferably by the age of three months.* Angioma in children of three years of age or more yields slowly and less completely than in infants. The duration of the treatment, the amount of radium, and the expense increase considerably with age. In adult life radium therapy is of little avail.

Reactions to Treatment: No reaction is experienced or expected at any time. Treatments of ten to twenty hours' duration are superior to two or three hour exposures when the same total dosage is delivered in each instance. Ingenuity is required in treating lesions of the mouth, the vulva, and buttocks while applications to the face, scalp, chest, and extremities present few difficulties. Attempts to hasten the treatment by frequent or heavy applications lead to unnecessary reactions such as mild erythema, bronzing, or epilation—complications which are needless, distressing and which are to be scrupulously avoided.

Undesirable Techniques: Interstitial applications of radium or radon are said to hasten the end result. Embolism at rare intervals complicates this form of irradiation and seems unjustified when excellent cosmetic results may be obtained without risk by the short distance, external method of treatment.

Contact or near contact applications of unscreened or lightly screened plaques may obliterate the superficial vessels of the skin quite satisfactorily but the deep-lying subcutaneous pathology escapes sufficient irradiation, thus remaining to become the cause of deformities and recurrence. The hard gamma rays must reach the depth of the lesion in sufficient amounts to obliterate every portion of the angioma.

Results: The end result in practically every case of cavernous hemangioma properly treated with radium in infancy is a normal skin leaving no signs whatever of the previously existing birthmark. The cosmetic result is usually perfect.

Typical Case Histories: Typical case histories from the author's private practice follow:

1. Baby B. Lesion on right costal margin measuring 6x6x1.5 cm.; red, raised, compressible strawberry mark. Treated from 4/1/30 to 1/27/33 with 21 treatments, averaging 450 mg. hr. each, with a total of 9350 mg. hr. 3/1/33 Lesion completely disappeared; no scarring.

2. Baby K. Lesion is a strawberry mark measuring 1x0.5 cm. There is present a bluish, elevated base measuring 2x1.5 cm. Treated from 4/10/31 to 10/14/32 with 16 treatments, averaging 350 mg. hr. each, a total of 5750 mg. hr. 12/1/32 Lesion completely disappeared.

3. Baby M. Raspberry mark 1 cm. in diameter, elevated 0.5 cm. Treated from 6/23/31 to 6/23/32 with 11 treatments, averaging 300 mg. hr. each, a total of 3125 mg. hr. 8/1/32 Complete obliteration.

4. Baby S. Lesion is a raspberry mark involving the three lateral fingers and the palm of the hand from the first metacarpal joint backward into the palm and dorsum of the left hand. Treated from 2/12/30 to 3/24/31 with 12 treatments, averaging 300 mg. hr. each, a total of 3500 mg. hr. 5/1/31 Complete obliteration.

5. Baby E. Lesion in the right templar region measuring 2.5 cm. in diameter, with irregular border 3 mm. thick. There is present a slight central scarring due to a previous ulceration. Treated from 10/15/28 to 11/2/29 with 13 treatments averaging 500 mg. hr. each, a total of 6500 mg. hr. 1/2/30 Complete obliteration with faint scar marking site of old ulceration.

Baby B. Lesion is an angioma of the lip involving the skin and mucous membrane measuring 1 cm. in diameter. Treated from 3/25/30 to 11/24/30 with six treatments, averaging 450 mg. hr. each, a total of 2600 mg. hr. 1/2/31 Lesion completely disappeared.

Note: These case histories represent more or less typical cases. There have been no complications of any sort, no reactions, and completely satisfactory cosmetic results were obtained in all.

CONCLUSIONS

1. Cavernous hemangiomas occurring in infants on exposed portions of the body are best treated with radium in conservatively applied,

frequently repeated, sub-erythema doses of radium.

2. The end results in the treatment of lesions in infants is invariably completely satisfactory from the cosmetic standpoint.

3. These lesions should be treated as soon as possible after discovery to obtain the best results.

4. Lesions allowed to persist until adult life present far greater difficulties and require other methods of treatment than irradiation.

180 N. Michigan Avenue.

A MENTAL PICTURE OF THE SURGICAL CLINICS DURING THE PAST FIFTY YEARS AS OBSERVED BY AN INTERNIST—RETROSPECTIVELY

JOHN RITTER, M. D.
MIAMI, FLA.

On a recent June morning, beautiful and cool, I left my hotel and walked leisurely to a nearby hospital. On arriving there, I observed that none of the attending physicians were in sight, so at the reception-room desk I inquired their whereabouts, and was graciously informed that they were all in the Surgery. The elevator quickly brought me up to the surgical floor, where I walked slowly to the operating-room, and, on opening the door, I beheld, with solemn awe, one of the most beautiful, the most chaste, the purest, the sweetest, the most heavenly picture it is given any human mortal to witness. In that operating-room, which was brilliantly illuminated with electric lights, a group of surgeons were operating on a patient. All were invested with spotless white raiment, covering the entire body, from the head over the eyebrows, from the bridge of the nose down, and from the temples back, leaving only the eyes exposed—the whole body was enveloped in immaculate white. Two nurse-attendants, clothed also in crisp white gowns, with only their clean, sweet, oval, Madonna-like faces left uncovered, complemented this divine picture. As I meditatively entered this medical sanctuary, consecrated with blessings conferred by thousands of happy souls that have emerged herefrom with healed bodies and rejuvenated spirits, not a word was spoken to me, not even a greeting sign extended to acknowledge my presence, although I was well known to all of the attending group. Here before me, were eight souls merged into a single mind, pondering the sole question of, "How much good can we, poor human mortals, do to physically help this unfortunate individual?" During the entire operation not a human sound was uttered nor a single word spoken as these automatons in white, like celestial visitants, moved about in absolute silence, working harmoniously and efficiently, with Spartan intrepidity, their minds focused intently on the patient. And it was not until the operating surgeon put down his scalpel or forceps, stepped away from the side of the patient, removed his gloves, took off the coverings from his face, did he greet me with: "Hello, Doctor! How are you?" Such a serene, sanctified scene can now be seen almost daily at any hospital throughout our country, nay, all over the civilized world. I shall always cherish this lovely, hallowed picture, enshrined in a halo of adoration, in my mental album; and will now describe some additional reminiscent portraits as they flash across the screen of my memory.

Incidentally, I now wish to add one, perhaps two sketches, which do not come under my collection of mental pictures—do not belong to my mental scrapbook, but which have an explanatory bearing on this subject. These pictures date back about 100 years, so belong to the nineteenth century, terminating in 1850, the middle of the century. The nineteenth century is known, in the medical world, for its discovery of anesthesia and its work in the field of asepsis, which was before the medical profession could reason out the cause of either acute or chronic diseases. I desire to present here a true American physician, Dr. Oliver Wendell Holmes, and to place his picture in a high niche of honor, where it justly belongs, as he is not sufficiently venerated. In 1838 Dr. Holmes offered a paper on "puerperal fever," pointing out the genesis of puerperal disease,—a suggestion which was then considered puerile, visionary, and even such leading gynecologists as Drs. Meigs and Pepper critcized it quite severely. The companion picture, a co-worker in this group, was then offered at Vienna, in Europe, where a Dr. Ignaz John Semmelweis first pointed out that puerperal infection was brought into the parturient woman by the hands of the accoucheur, toxic material

from without. These two physicians, the one here in our country and the other in Europe, belong to the same class. They were not known to each other, although Dr. Holmes mentioned a physician in Vienna, but of whose name he was uncertain. They were pioneers in the fight for asepsis, and not sufficient homage is given to either. Here, in our country, we do not pay sufficient reverence to the memory of Dr. Oliver Wendell Holmes. When we refer to the beginning of exact medical science, to the observations of disease as a distinct entity, we usually mention French, English, German, or other foreign scientists or investigators, forgetting that here, right at home, we can honor the memory of one whose observations in the field of medical truths antedates any and all of these European investigators.

These last two relative pictures that I have added to my accumulation of mental surgical holdings belong principally to the first half of the nineteenth century; and I shall now complete my mental album of that century with a few composite pictures gleaned from the kaleidoscopic impressions received during fifty years of personal observation, when I was a student at the old Rush Medical College and, later, as a member of the teaching staff.

During that time, on most any afternoon when the weather permitted, along Michigan Avenue could be observed a commanding figure, a Major General, erectly mounted on a high-stepping black charger. This graceful equestrian was appropriately garbed in riding jacket, breeches, and a striped riding cap, with high boots shining and silver spurs scintillating in the bright mid-afternoon sun. He was an excellent horseman and presented a striking appearance as he cantered down the boulevard, occasionally flicking his horse's flanks with his riding whip, to accelerate its speed. This man was well known to every citizen as Dr. Moses Gunn. He was the teacher and Professor on Surgery at Rush Medical College. Frequently, he would jump from his horse and come directly into the arena to lecture, beginning just where he had left off at his last lecture. If the gong, the signal that his hour was up, had cut short his previous lecture, even in the middle of a sentence, he would start his next lecture by finishing this interrupted sentence. Often, in his Saturday afternoon surgical clinics in the upper amphitheater, after dismounting he would step right up to the patient to be operated on. He was the idol of all the students, and they considered his procedure in the surgical room the proper course to follow.

Another mental facet from memory's notebook, which I now wish to present, would be thought exceptional at this time, but was then considered good surgery by the student body because this particular operator—our idol, our hero, performed the work. However, we must admit that perhaps today what we offer would not be considered as good surgical practice. A patient was brought into the arena, anesthetized, suffering from a necrotic lesion of the middle portion of the femur. Then the operator came into the arena, seated himself beside the anesthetized patient; his hands were washed. He put the index finger of his right hand over the sinus opening of the exposed parts of the thigh, felt for a few minutes, then took a scalpel, made an incision through the skin down to the bone over the necrotic area, thrust his index finger into the wound to widen the opening; then, again, he took up the scalpel to deepen the incision, but, instead, this time he placed the scalpel—not on the table, but between his teeth and held it there, and with his index finger in the incised wound he again reached for the scalpel from between his teeth, made the incision a little larger, returned the scalpel again to its place between his teeth, and began the removal of pieces of necrotic bone. To most of us students this was considered heroic surgery, proper surgery, and as our idol did it, it was considered the lone, the true surgical way. Asepsis in surgery was then not known as we know it today; but long before the death of this good man and teacher, this noble soul, Prof. Moses Gunn, he became well acquainted with the true method of aseptic surgery as it is now in vogue.

We now present to you another vignette from this mental album. During the 80's much was said and debated about the surgical teachings known as the "Lister" method of surgery; and some of the members of the Cook County Medical Society deemed it expedient that one of the members, in good surgical standing, be sent to England to learn the modus operandi of this method and bring it to Chicago, to disseminate

this surgical knowledge to the members of the Medical Societies. As Dr. William T. Belfield, a promising surgeon, a bright student and able practitioner, was about to go abroad and would remain some months in England, he agreed to acquire the technic and bring this knowledge to Chicago. He returned in about four months, when arrangements were made for him to demonstrate the Lister method in the upper amphitheater of the old Rush Medical College. The Lister Clinics were heralded through the daily press and the medical bulletins, with the time specified when they would be conducted; and so, on a Saturday morning, in the upper amphitheater of the Rush Medical College, the anesthetized patients were brought in, and Dr. Belfield demonstrated to us the Lister technic. The patient being in the arena, the parts of the body to be operated on were cleansed with soap and water, and, before the operator could use the scalpel, four assistants—one at each of the four corners of the operating-table, the four points of the compass—each holding in his hands an atomizer filled with a 0.5% solution of carbolic acid, started spraying the solution over the area on which Dr. Belfield was to operate, and continued the spraying during the entire time of the operation, the operator covering his mouth and face during the procedure with a moist towel covered with rubber sheeting. Two mornings were devoted to these demonstrations; and, as I was quite near the operating table, a physician near me asked my opinion concerning the proceedings. I answered that I did not know, but that it did seem to me a most reasonable treatment. Even at this late date I distinctly remember him—believe he was gynecologist of foreign birth, a Dane or a German. He said to me: "Let me tell you there is nothing to this whole thing. This is what I use," and, reaching into his coat pocket, he brought out a common, ordinary hand-brush; "this beats them all. It will do the trick!" Dr. Belfield, a capable, intelligent physician, died early in his career—a great loss to the Chicago Medical Society and to the medical profession throughout the country.

Now, to my mind, this "common, ordinary hand-brush" should have a conspicuous place assigned in this mental art gallery. It should be encircled with a radiantly illuminated halo! It is the first aid to the present operator; and ever since aseptic surgery has come into existence, this hand brush is the first thing the surgeon reaches for when he is preparing himself to perform an operation. The surgeon has saved more human lives, lessened more pain, more suffering, by its use than all the directions, prescriptions and instructions given for the eradication and destruction of the disease-producing germs.

The next pictorial illustration from my mental etchings is a sensational one, resembling a dramatic, theatrical, radio, or cinema production. In my first picture, the supreme, the sublime, the divine one, not a word was spoken in this sanctuary of tranquil quietness, where the operating-table was a shrine and the patient worshipped as a holy object of reverence; where silence became a fetish, a symbol of faith. But in this, my last mental picture presented here, from the very beginning of the operation, through to its completion, the spoken word, mounting even at times to eloquent oratory, was the prevailing custom. First, the surgeon would explain the reason necessitating the operation; then, next, his method of procedure would be demonstrated, and every motion made with the scalpel was vividly described in detail. Here the technic was most dramatically and minutely emphasized by the late Dr. Nicholas Senn. Usually, during his Saturday afternoon surgical clinic, also in the upper amphitheater of Rush Medical College, he would operate while speaking, often very fluently and at length, before an overflowing house. Every seat in this large class-room, seating about 500 persons, was taken; all the available floor space was occupied, not even standing room remained. On Saturday afternoon Dr. Senn would begin operating promptly at 2:00 o'clock, continuing up to and often past 7:00 o'clock in the evening. At about 4:00 o'clock there was an intermission of about fifteen minutes, when Dr. Senn would very slowly sip a cup of hot chocolate, which had been prepared by a nurse at the Presbyterian Hospital. Later, similar clinics were organized all over our country, also even here in our own city; but none has ever equalled him in his clinical teachings, to say nothing of having excelled him. He was a master surgeon, a competent physician, and an able pathologist—three

qualifications seldom found in one man. While operating, if it was deemed necessary to make a biopsy and the stained specimens were returned to the operating-room on portable microscopes before they were passed around to the visiting physicians, he would scrutinize them closely, from which examination he was able to demonstrate skillfully his pathological knowledge. He would remark: "If you look at 10:00 o'clock you will see a bunch of cells; they are normal cells, but they are in the wrong place. These are known, according to the Cohenheim's theory, as 'Cohenheim's carcinoma cells,'—that gives one the diagnosis. If you look now at 4:00 o'clock you will find a similar group of cells; these are perfectly normal, the tissue is congested, and many blood vessels can be seen." He would then pass the microscope to his right, take the second microscope, read its meaning and pass it to his left.

In 1889 Dr. Nicholas Senn was appointed clinical teacher at the Rush faculty of surgery, not as a surgeon of the clinic, but only teaching the principles of surgery. As no opportunity was offered him in this position to demonstrate his clinical knowledge as a surgeon, he resigned in 1891. A few months after his resignation, the then clinical Professor of Surgery at Rush, Dr. Charles T. Parkes, passed away, and soon thereafter Dr. Senn was recalled to Rush and installed as full clinical surgeon. As Dr. Senn loved things military, he at once instituted a clinical method along military lines, which soon led to his conducting the largest surgical clinics in our country.

Dr. Nicholas Senn was a true Chicago production. Of Swiss birth, he came to this country when a small boy, his parents locating in Wisconsin. When a young man he taught school and read medicine, as was then customary, with a preceptor; later, he came to Chicago, where he entered the Chicago Medical School, now the medical department of the Northwestern University, from which institution he was graduated; and for nearly two years thereafter he devoted his time at the old Cook County Hospital at 18th and Arnold Streets. Dr. Senn was a self-made physician and surgeon, and as a teacher he had no peer. His delivery was forceful and his English pure.

These mental portrayals are drawn from my recollections after more than fifty years of observation in the medical field, one-half of which were during the last twenty-five years of the last century and the other half during the first twenty-five years of the present one. These observations were made, first, here in Chicago, while a student at the old Rush Medical College; then as a teacher and instructor at Rush; and now as a retired physician.

In this series of mental portraits delineated here, I still maintain that the first one depicted, but the last in my observation, representing the present surgical course, is the sweetest, the most humane. In most of my mental pictures, the operator appears to be the main actor in this drama—the hero; but in the pictures as we see them at the present time at the surgical clinics of any good hospital, the unfortunate victim on the operating-table is now the hero, the sole object of consideration.

2370 S. W. 23rd Terrace.

THE ROENTGEN TREATMENT OF UTERINE HEMORRHAGE, AMENORRHEA AND DYSMENORRHEA

I. S. Trostler, M.D., F.A.C.R., F.A.C.P.
CHICAGO

When my very good friend, the Secretary of this Section, invited me to present a paper before this Section, I promised myself that I would discuss a subject which would be of interest to the general practitioner as well as to radiologists, and while musing over what to decide upon I concluded from my own experience and what we see every day, that the pains, aches and monthly distress of women, from puberty to the menopause, would be a most appropriate subject.

Being a radiologist, I naturally approach the subject from a radiologist's point of view; so I will try to tell you how and why I think that roentgen ray therapy is the best and most desirable method for the treatment and alleviation of uterine hemorrhage, amenorrhea and dysmenorrhea.

The treatment of these gynecological conditions by radiation is attracting more and more

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attention and interest from the general practitioner of medicine, and justly so.

The use of the roentgen rays as a therapeutic agent in the pelvic conditions in women is not at all new. In fact, so much has been presented before medical meetings and published in the medical press, that I shall not pretend to offer you anything new or novel; but will try to present some of the arguments in a new way, and remind you of some of the important elements of the subject, which should be considered in connection with every case of these common, ever present, but none-the-less painful and debilitating conditions.

After the extended and exhaustive experiments and experiences of Foveau de Courmelles, Longfellow, Albers-Schonberg and other early workers with the roentgen rays, followed later by the numerous clinicians and pathologists, we find that we have learned a great deal about how and why we may produce definite clinical results and effects, modify certain functions and malfunctions, and cause certain organs to act in certain ways and react to the effects that we cause them to. While we have accomplished much in the production of certain organic and tissue reactions, in regard to the subject of this paper, we must frankly admit that we have not progressed very far as regards the precise and exact causes of some of the effects which we produce.

Our experience thus far has proven in a conclusive and certain manner, that certain menstrual disorders, such as uterine hemorrhage, amenorrhea and dysmenorrhea, either during or between the menstrual periods, may be favorably influenced by relatively small doses of the roentgen rays.

Primarily, this group of ailments is generally considered to be due to the same etiological cause. The most conspicuous feature of all of this group of female ailments is a deficiency or a more or less absence of control or balance, and absence of the menstrual rhythm. The endocrine glands which influence and regulate the menstrual cycle appear to be out of harmony. They are apparently out of tune with each other and do not act in concert and seem to need tuning, somewhat after the manner of a multicylindered gas engine that has had the timing gear slip and is firing out of time.

Oligomenorrhea or scanty menstruation is practically always accompanied by dysmenorrhea, and menorrhagia is likewise usually a more or less painful affair. The most violent menstrual or intermenstrual hemorrhages (menorrhagia or metrorrhagia) sometimes ceases suddenly or alternate with deficient flow, and again recur as severe and ofttimes debilitating hemorrhage.

Pelvic examination frequently reveals only slightly enlarged or tender ovaries, small or moderately enlarged, flabby uteri, and similar minor pathology. The ovaries may be found to contain a few small cysts, etc. It is not at all unusual to find so little departure from normal that we are reluctant to blame the pathology found in the pelvis for the severity of the patient's complaints.

Many of these patients, particularly the younger ones, have lost so much blood that they are anemic, while others who may not bleed so profusely are liable to be mentally depressed, sit around listlessly, or are highly irritable and hysterical. Often they have severe headaches, are nauseated, and all of them fear and dread the coming of their menstrual periods. If they are at school, many of them have to be absent a few days to a week during each menstrual period, while those who are employed are compelled to risk losing their positions, because of their forced absence from their desk or counter. This is of course most true in the obstructive types of dysmenorrhea.

Fortunately, a small proportion of these patients may be relieved by the administration of some of the gland preparations like ovarian, pituitary and thyroid extracts; but so many of them are only temporarily relieved, and because roentgen therapy offers such a high percentage of complete remission of the most disturbing of the symptoms, and a large percentage of complete cures, modern radiologists are now advocating its use in all cases not frankly surgical or presenting surgical pathology.

Naturally, we are asked how is this accomplished and why does roentgen therapy act as a regulator of the menstrual cycle? Frankly, we admit that we do not know exactly how this is done. True, we have a theory, upon which we are working, but until that theory has been proven, all that we might say would only com-

plicate things more and cause unnecessary argument.

Frequently, we apply only small doses of the roentgen rays, and it is often found that with these small doses we effect some of our most spectacular cures.

Primarily, roentgen radiation in small doses is analgesic. It depresses pain. The roentgen rays are *always depressant.* They *never stimulate.* By our therapy we first depress the pain, probably by reducing the pain carrying function of the nerves as well as depressing the production of pain in the sensitive organs where the pain originates.

Roentgen radiation has a selective action upon gland tissue. This was discovered early in the use of roentgen therapy. This is probably in a large measure one of the principal reasons why, during and as the result of our application of the rays to the pituitary, for the control and regulation of the menstrual cycle, we produce at times almost startling results. In effect, we are probably depressing an overactivity of the pituitary gland, which because of its overactivity and overproduction of one of its hormones is causing a disharmony or discord of group of glands which control the menstrual cycle. By this process, we indirectly produce a regulation of the menstrual cycle and all that goes with it to make up normal function of the organs involved.

We realize that if we applied large doses of our radiation, we could produce a complete cessation of menstruation; but we do not need to nor do we want to produce any such pronounced effect unless the condition is so severe and incapacitating as to necessitate it. In that type of case we do not hesitate to produce a menopause.

In some of these cases, we do not irradiate the pelvis at all; but confine our therapy to the hypophysis. These cases are rather the unusual exception; but we have had a few of them. On the other hand, we have had a very considerable number of cases which presented such extreme, agonizing dysmenorrhea, that it was the choice and desire of the sufferers, that we produced a complete cessation of the menstrual function. Under these distressing conditions, we have felt entirely justified in administering enough radiation to produce the menopause. Several of these women have expressed their gratitude in such heartfelt manner, that we feel that this is certainly a worthwhile procedure.

It may surprise some of you to learn, that in many of our cases we apply only from one-twentieth to one-tenth of a dose (25 to 40 r) to each area treated. As that amount of radiation is far short of the castration dose, there can be little danger of producing a permanent menopause in we have found in some of these patients with dysmenorrhea and a markedly diminished menstrual flow, that irradiation of the pituitary region alone, produces satisfactory results, and in these, we have not felt called upon to administer any radiation to the pelvis. Reasoning from this effect, we have come to the conclusion that we have depressed the pituitary hormone output, which, because of the absence of the excess has permitted the ovaries to function normally. Stating it in another way, we affect the pituitary so as to modify the pituitary-ovarian imbalance, and by so doing permit the establishment of a proper interglandular balance or coordination, which is apparently necessary for the proper regulation of the menstrual cycle.

We realize that this explanation is rather theoretical and possibly unscientific for that reason, and that our therapy is largely empirical. However, unscientific and empirical though it may be, we know that it works for the relief of the suffering women to whom we apply it. We also remember that the administration of quinine and the cinchona preparations was empirical for the many years before the malarial organisms of Laveran were discovered, but it worked. It cured the malaria, just as we cure our patients.

UTERINE HEMORRHAGE

In the frankly hemorrhagic cases we generally administer more radiation to the pelvis, and here we have a better and more definite knowledge of what our therapy does to affect the results.

The effects of roentgen radiation upon the pelvic organs in this group of cases are threefold.

Primarily, the ovarian function is depressed, and

Secondarily, the relaxed blood vessels in the soft boggy uterus are acted upon and reduced in caliber by the production of an endarteritis, while

Thirdly, the blood is rendered more coagulable.

These effects are produced by the administration of somewhat larger doses; but in many of these cases, most satisfactory relief from the complaints of the patients are produced by the application of dosage decidedly short of sufficient to produce a permanent menopause. Not infrequently we do produce a temporary amenorrhea, lasting from a few months to a year or even longer; but in most all of these cases, unless we deliberately administer enough radiation to produce a menopause, menstruation is resumed within a year and with a normal flow and absence of distressing symptoms.

Hemorrhage Due to Fibromyomata. So many of the purely hemorrhagic cases are due to the presence of fibromyomata or fibrosis of the uterus, that a careful and most searching examination should be made of every patient. As a matter of fact, I am sure that much of my successful treatment of this and other conditions is the direct result of my insisting upon making complete and thorough examinations of every patient who comes under my care.

A summary of the reports of a large number of gynecological clinics and gynecologists, gives us the figures that fibromyomata, as a clinical entity, is the cause of slightly more than 90% of all uterine hemorrhage. With that high percentage to figure on, and the ruling out of malignant disease of the body of the uterus, which from the same sources is figured at 3%, roentgenotherapy may be safely applied, and if the patient is at or near the menopause, an early and easy, symptomless menopause is produced.

Abnormal Menopause. There is an increasingly large group of women in whom the beginning of the menopause is marked by a considerable disturbance of the menstrual cycle, accompanied by more or less physical suffering and disability.

In many of these women patients the monthly flow is markedly increased, may recur a day or two after cessation and show other definite abnormalities and irregularities. Most of the medical profession are prone to tell these patients, that "things will come out all right if they wait"; but there is no use or sense in waiting, when they may be speedily and easily relieved *without waiting.*

With most of these irregularities, physical disabilities usually occur, and incapacity and inability to attend regularly to household and social duties are the result. This condition frequently extends over long periods. Two to five years of life like that are not at all unusual, and when complete relief can almost certainly be expected in a short time and without disability or inconvenience, it seems right and just that these patients, so often the best brains of our women, should be given the opportunity to be restored to normal physical health.

In these cases, we unhesitatingly and purposely administer dosage sufficient to produce a complete cessation of the menstrual flow. Our experience shows that this is best done by planning our dosage so as to produce the full effect in from two to six months, depending upon the condition of the patient, physically and mentally. Some of our most gratifying results and most highly pleased patients menstruate only once or twice after beginning the treatment and then pass into a painless, symptomless and uninterrupted menopause.

Martindale,* a prominent English woman gynecologist, well said, "The menopausal symptoms in irradiated patients are no more severe than, in fact, not as severe as, in those of the normal climacteric.

"The temporary amenorrhea caused by irradiation is a valuable method of treatment in certain cases of psychoses and tuberculosis.

"The risk of malignant disease occurring in an irradiated uterus is no greater than, if as great, a risk of carcinoma occurring in it or any other organ of the body in an untreated case."

It must be borne in mind, in the handling and administration of the treatment to all of these different types of patients, and their ailments, that no two patients can be handled in exactly the same way. No two patients are ever exactly alike. I have had twin sisters, who in every physical way were identical, married the same day, had two children each,—each pair of which were born within one month of each other,—who began their menstrual life within two weeks of each other; but who, when their menopause began were as different from each other as they

*The Artificial Menopause with Especial Reference to End-Results Obtained by Various Methods of Induction. A Clinical Review of Six Hundrd and Twenty Cases; Martindale, Louisa; British Medical Journal, Nov. 11, 1933.

could be, although both of them had abnormal conditions which caused them to be referred to me. Every patient must be handled as an individual and studied as carefully as every other one. The patient must be studied as well as the diseased condition with which she is suffering. We can not, must not, and do not, lay out a definite course of procedure for all patients, any more than can or should a surgeon exactly plan an operation or a medical attendant state exactly how many doses of medicine will be needed to effect a cure of any condition. It is of course unnecessary for me to call your attention to the fact that no one not graduated in medicine and of considerable experience in the handling of diseases of women, can possibly be competent to make a diagnosis in these cases, and that no one except a physician should even so much as attempt to treat them by means of roentgenotherapy. Much more than a superficial knowledge of the use of the roentgen rays is necessary to produce the results that we have a reasonable right to expect in the conditions we have been discussing. With that in mind, we will proceed to summarize and draw our conclusions.

SUMMARY

1. Normal menstruation varies considerably, particularly in regard to the amount and duration of the flow; but when after puberty, it is established, it should follow a definite rhythmic cycle.

2. Women who have irregularities of menstruation should be carefully and thoroughly examined by competent, experienced physicians, so as to determine the presence of or to rule out anomalous, anatomic structural, pelvic or general pathology.

3. There is a large group of apparently otherwise normal women, who present no evidence of gross pelvic or other abnormality or pathology but who have markedly irregular and abnormal menstruation, and who suffer severe pain, debilitating illness and serious disability because of same.

Because of the foregoing we present the following conclusions:

Roentgenotherapy intelligently applied, has been found to relieve many hopelessly afflicted women, who would otherwise drag through a life of monthly misery.

Roentgenotheraphy, in the conditions here discussed, is safer and in every way pleasanter for the patient than is any other method of treatment. It is applicable to patients who are not good surgical risks. It does not necessitate anesthesia nor absence from the patient's usual occupation.

Roentgenotherapy should only be administered by graduates in medicine, who have had adequate training in radiology, and should never under any circumstances be administered by lay technicians.

DISCUSSION

Henry W. Grote (Bloomington): Dr. Trostler kindly sent me his paper several weeks ago and I read it several times. When you read his paper in the JOURNAL, I wish you would pay particular attention to the symptoms of women who have had disturbance. If you will do that and follow up a few cases with treatment, you will certainly discover you have a very valuable method at your command, for aiding women between twenty-five and forty years of age. The Doctor did not mention the frozen pelvis, but the subject is so large he could not cover it in a short time. The relief which can be given these women in fifteen or twenty minutes with a small voltage is remarkable. You may argue that the method is empirical. You can place it on the neurological or endocrino-logical basis as you see fit. Either will apply because they will dovetail. I am glad Dr. Trostler mentioned the fact it should be administered only by an experienced roentgenologist. In addition, he should add, a man who has had some real actual general experience. Your patients will report they are so much more comfortable you will wonder how it all happened. Then is the time to keep your head since this method is very easily abused and overdone.

THREE CESAREAN SECTIONS WITH UNUSUAL INDICATIONS

WALTER W. VOIGT, M.D.
CHICAGO

Cesarean section is to be considered when delivery of the child by way of the birth passages is impossible, and delivery is nevertheless demanded in the interest of mother or child.

With your kind indulgence, I should like to report three cases presenting unusual indications for cesarean section, but in which there was no impediment from the direction of the birth canal, nor any hindrance to delivery from stenosis of the soft parts or from tumors. All three patients were multiparae. In one case, adhesions interfered with the labor pains, caus-

ing a standstill of birth processes; in another, there was a high fever as a result of a cystopyelitis with involvement of the renal parenchyma, and in the third case, a gravidity of seven months, a placenta praevia lateralis resulted in such severe bleeding, at a time when the cervix was permeable for one finger only, that immediate delivery was necessary.

Case 1. The first patient was a para III, whose right ovary, tube and appendix had been removed, and the uterine ligaments shortened seven years previously. Since that time the patient had suffered from menstrual irregularities and severe pains during the periods. This condition was ascribed to adhesions and to hormonal dysfunction. She desired to be rid of the pains and to have another child, a daughter if possible. Vaginal examination disclosed a retroverted uterus, buried in adhesions and barely movable. A long period of diathermy and hormone treatment was successful in rendering the uterus quite movable, the menstruation normal, and eventually the desire of the patient to become gravid became a fact.

During pregnancy she complained of a great deal of pain in the abdomen and suffered from vomiting during the entire course of pregnancy. Since there were no symptoms ascribable to pre-eclampsia, the pains and vomiting were attributed to adhesions. Urine, blood pressure, blood picture, and reflexes were normal. During the night of April 18-19, labor pains set in, accompanied by dripping of amniotic fluid. The patient was sent to St. Joseph's Hospital.

On the morning of April 19, the cervix was completely dilated, but the head remained high up and mobile in a position of left occiput posterior. Weak pains were present and were accompanied by a noticeable retraction of the abdominal wall. In the course of the day the pains entirely disappeared and could not be roused by quinine, solvochin enemas or pituitrin. Since on the following day (April 20) no progress had been made, artificial emptying of the uterus was indicated.

Now the question of method arose. The cervix was completely dilated, the amniotic fluid practically all drained away, and the head mobile in left occiput posterior. Therefore, the methods available were high forceps, version, and cesarean section. The Killand forceps or version would have permitted delivery of the child by the vaginal route. However, the absence of labor pains, induced apparently by adhesions, and the failure to induce them by conservative means, made these two methods seem too hazardous. When the child and after-birth had been removed, how would the placental bleeding be controlled? The adhesions would prevent uterine contractions and it would then be too late for laparotomy. Therefore, as cesarean section seemed to offer the greatest degree of safety as to life for both mother and child, this method was chosen. As a matter of fact, the section seemed to have been justified, since the uterus was found to be grown fast over extensive surfaces to both the front and back walls of the abdomen, and had to be literally shelled out from the masses of firm adhesions in order to be gotten free. The peritoneal cavity was, if one may use the term in this connection, obliterated, and any noteworthy contractions of the uterus after it had been emptied of its contents, could hardly be expected. Apparently, an uncontrollable hemorrhage would have resulted. The pains were strong enough to dilate the cervix but too weak to drive out the child. After freeing the uterus from its adhesions and removing its contents through what might be designated a "high cervical incision," good contractions of the uterus were secured with pituitrin. Thus was explained the phenomenon of retraction of the abdominal walls during the labor pains. The mother and child did well, the wound healing without incident.

Case 2. The second case was that of a para II in the seventh month of pregnancy. Suddenly at night she noted bleeding and was taken immediately to the hospital. The cervix was permeable for one finger, there was a little blood in the vagina, and pains were absent. The patient was treated expectantly. Pantopon was administered and ice-bags were applied. Suddenly, however, severe bleeding developed, the patient became pale, and her pulse thready. She was delivered within ten minutes, by classical cesarean section, of a three-pound baby. The bleeding was due to a placenta praevia lateralis. The child was nursed through in an incubator. In this instance again, the cesarean section seems to have been life-saving for both mother and child.

This second case is of further interest in that soon after operation an ileus developed and steadily became worse. There was vomiting and enormous bloating. Some years previously this patient also had undergone a laparotomy for retroflexion. The intestines were adherent among themselves and to the omentum, and some of these adhesions had become drawn out into cord-like strands. These adhesions had, of course, been separated at the time of the section. The ileus could not be relieved by either enemas or physostigmin. Gastric lavage resulted in merely temporary relief of the vomiting. Placing the patient in lateral decubitus did not help and she could not be placed on her stomach (abdominal decubitus) owing to the enormously bloated abdomen. Therefore, despite the fact that we had supposed all the adhesions to have been separated during the cesarean operation, intestinal occlusion by means of a strand of adhesion was assumed, and relaparotomy considered. Re-interference, two days after the original laparotomy, was a hard decision to make and another attempt was made to arouse the peristaltic function of the bowel by intravenous infusions of hypertonic salt solution. The result was truly dazzling. After four injections, peristalsis set in and two days later, under a continuation of two injections of the hypertonic salt solution daily, the bowel was completely collapsed, the drum-like dilatation of the abdomen had disappeared, and the bowel function was normal. The patient went on to a complete and uneventful recovery.

Case 3. This patient was a para II, who, a few days prior to the estimated date for the onset of labor,

began to complain of pain in the lower abdomen. The pain became progressively worse. A physician was summoned. She had an oral temperature of 104.6°. The region of the bladder, left ureter and epigastrium as far as the left kidney was sensitive to pressure. Defense musculaire was absent. There was no evidence of labor pains. The movements of the child appeared much more active after the onset of pain. The patient was sent to the hospital with the provisional diagnosis of pyelitis. Examination of the urine disclosed, albumin + + + +, a few red blood corpuscles, many pus cells and epithelial cells. The bacteria found were B coli, staphylococci and streptococci. The blood count showed 26,000 leucocytes of which 89% were polymorphonuclears. As for the rest, there were a few hyaline and granular cylinders. The diagnosis, therefore, was cystopyelitis with involvement of the renal parenchyma.

The evident severity of the infection, the high fever and urinary retention, only 240 c.c. being passed in twenty-four hours, made it appear inadvisable to leave the child exposed longer than the two days to this injurious condition of things. The life of the mother would also be endangered by a continuation of the condition. Since the cervix was closed, cesarean section was the only alternative. An expectant attitude, with irrigations of the renal pelvis in the presence of the complicating involvement of the renal parenchyma, seemed too hazardous. And, then, catheterization of the renal pelvis (in this period of pregnancy) is frequently impossible. Finally, artificial induction of labor with its lengthy period before the child is delivered, would only have rendered the condition worse than it was. As a matter of fact, with a low cervical section a living child was procured, and the mother, under appropriate treatment, has, aside from traces of albumin, entirely recovered.

Discussion. Pyelitis gravidarum is not so rare. According to Stoeckel, the patient may recover under conservative teatment if the condition is taken in time. Often, however, the pregnancy must be interrupted. Abortus artificialis, as a rule, brings immediate relief. Statistics show that an interruption of pregnancy is necessary in one to three per cent. of hospital cases. The usual case is one in the fifth to the seventh month of pregnancy. The literature discloses only five cases in which the pyelitis did not appear until the end of pregnancy. In the present case there was an abdominal cesarean section, securing a living child. In this instance, there was no longer a question of "taking the pyelitis in time"; the infection had gone over from the renal pelvis to the renal parenchyma and it was, therefore, no longer a simple pyelitis but a pyelonephritis. The literature reports numerous deaths where the pregnancy has not been interrupted in time. The causes of death in these instances have been renal abscess, endocarditis, sepsis, anuria and perforative peritonitis. In two cases of W. Stoeckel in which death was due to kidney suppuration, the death occurred only later, during the puerperium.

If one may be permitted to discuss the later histories of women who have undergone an attack of pyelitis gravidarum, it may be noted that temporary improvement may take place, the condition, however, flaring up again at the time of labor. This occurs in about 50 per cent. of cases. The condition may eventuate in a puerperal fever, as in five of fifty-two cases reported by Ahlbeck, it may result in a fatal sepsis. Involution of the changes induced by pregnancy in the renal pelvis and the ureter is delayed in those patients who have undergone an attack of pyelitis gravidarum. Dilatation of the ureter may persist for a long time and render a further pregnancy inadvisable until the dilatation or kinking of the ureter has been shown roentgenologically to have disappeared. Follow-up studies by Naujoks show that of thirty-seven women, whose pyelitis had developed from two to twenty years previously, thirteen were still uncured. Recurrences developed not only during subsequent pregnancies but also following colds, intestinal disturbances, etc. About half the women who have developed pyelitis retain the condition in a latent form. The experiences recorded in the literature indicate that the prognosis in pyelitis gravidarum is by no means uniformly favorable and, therefore, long-continued observation of the patient, particularly during subsequent pregnancies, is essential.

It is desired to report these cases for the reason, that in the first case the cessation of labor pains and of progress in labor as a result of adhesions would not seem to be a frequent condition. In the second case, the necessity of cesarean section in the seventh month of pregnancy as a result of threatening placental bleeding and in the interest of the life of the child would, no more than in the first case, seem to be a frequent occurrence. In this second case, again, there would seem to be a special interest in the severe postoperative bowel atony and its correction under intravenous infusions of hypertonic salt solution. The third case is one of cesarean section for pyelonephritis gravidarum

gravis with indications for interruption of pregnancy. It is an instance of which only a few have been reported in the literature.

1151 North Shore Avenue.

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2. Baird, D.: Anatomy and Physiology of the Upper Urinary Tract and their relationship to Pyelitis. J. Obst. and Gyn **38:** 516-524, 1931. (Referred to in Zentralbl. f. Gyn. **56:** 2687-2688, 1932.)

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CORONARY ARTERY THROMBOSIS WITH TREATMENT BY PROLONGED REST IN BED AND LOW CALORY DIET; IMPROVED PROGNOSIS

Arthur M. Master, New York *Journal A. M. A.*, Aug. 3, 1935), reports on seventy-five patients in eighty-five attacks of coronary thrombosis treated by immediate complete rest in bed for six weeks and by a regiment of low calory diet. Eight patients died, only one in a first attack. Meticulous attention to detail is essential to the management of a patient in an attack of acute coronary thrombosis. During the initial stage of shock the patient is given very little food. Low calory diets and small meals prevent dangerous gastrointestinal cardiac reflexes or mechanical disturbances; they also lower the basal metabolic rate and diminish the work of the heart. The heart is given an opportunity to heal and to form collateral circulation. Morphine and codeine were used liberally for severe pain. Glyceryl trinitrate, amyl nitrite, digitalis and epinephrine were considered dangerous. The prognosis for the first attack of coronary artery thrombosis is considered very good. Usually a patient does not die in his first attack. About 70 per cent of the attacks occurred in hypertensive patients. A hypertension is generally present preceding a subsequent attack. It is probable that in women a coronary thrombosis takes place only when hypertension is present. The prognosis is better in cases in which the blood pressure is not high. The prognosis of patients with infarcts on the anterior or posterior surface of the left ventricle is equally good. Multiple attacks of coronary thrombosis are common. A patient who dies within twenty-four hours presumably has had previous attacks of coronary thrombosis and has probably suffered from marked hypertension. If the patient lives through the first twenty-four hours, he will probably survive that particular attack. Congestive failure is usually absent during the first attack of acute coronary thrombosis. Patients returned to their usual routine life or work following 62.5 per cent of the attacks and resumed light to moderate activity in 14 per cent.

METAPHORICALLY SPEAKING

"Look at this haircut," bawled the prisoner. "I paid seventy-five cents for it. Isn't it lousy?"

Society Proceedings

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Wednesday, January 8, 1936

A Review of the Physiology of the Pituitary Gland—A. C. Ivy, Professor of Physiology, Northwestern University Medical School.

Discussion—James H. Hutton.

Endocrinology and Organotherapy in Gynecology—Emil Novak, Johns Hopkins University School of Medicine, Baltimore, Maryland.

Discussion—Carey Culbertson, William Saphir, Hugo Rony, A. G. Gabrielianz, Irving Stein.

Joint Meeting of the Central States Society of Industrial Medicine and Surgery with the Chicago Medical Society

Wednesday, January 15, 1936

The Problem of the Pneumonokonioses in Iudustry—George G. Davis.

Traumatic Surgery Trends—John J. Moorhead, New York City.

Discussion—Harry E. Mock, C. R. G. Forrester.

The Clinical Aspects of Pulmonary Fibrosis Produced by Dust Diseases—Allan J. Hruby.

The Pathology of the Pneumonokonioses—Henry C. Sweany.

Roentgenologic Visualization of Lung Fibrosis Produced by Siliccsis and Other Dust Occupations—Hollis Potter.

The Legal Status of Occupational Diseases in Illinois—Daniel D. Carmell, Asst. Atty. Gen., State of Illinois.

The Role of the Medical Department of the Illinois State Industrial Commission in Connection with Occupational Disease—Philip H. Kreuscher.

Memorial Meeting—Sunday January 19, 1936

*Murphy Memorial Hall, 50 East Erie Street.

Julius H. Hess, President, Presiding.

Program

Processional—W. D. Belknap, Organist.

Assembly—Dr. Carl F. Steinhoff, Commander Victory

"A Beautiful Garden of Prayer"—Imperial Male Quartette.

Post No. 7, Drum and Bugle Corps, American Legion.

"In Memoriam"—Dr. Charles B. Reed.

"Heaven Is My Home"—Imperial Male Quartette.

Address—Reverend R. A. White, People's Liberal Church.

"In the Time of Roses"—Imperial Male Quartette.

Nineteen Thirty-five Necrology of the Chicago Medical Society by Branches (Lantern Slides).

"Crossing the Bar"—Imperial Male Quartette.

Taps—Dr. Carl F. Steinhoff, Commander Victory Post No. 7 Drum and Bugle Corps, American Legion.

Recessional—W. D. Belknap, Organist.
*Courtesy American College of Surgeons.

Regular Meeting, Wednesday, January 22, 1936

Auditorium, Medical and Dental Arts Bldg.,
185 North Wabash Avenue.

Orthopedic Program.

Sciatic Pain—Albert H. Freiberg, Cincinnati, Ohio.
Discussion—Fremont A. Chandler, E. J. Berkheiser.

Faulty Posture and Scoliosis—Philip Lewin.
Discussion—F. W. Hark.

Derangement of the Knee Joint—Edwin W. Ryerson.
Discussion—Daniel H. Levinthal, Beveridge H. Moore.

Regular Meeting, Wednesday, February 5, 1936

Syphilis Program

Treatment of Congenital Syphilis—Harold Rosenbaum.
Discussion—Alfred S. Traisman.

Treatment of Early Syphilis—Oliver S. Ormsby.
Discussion—Clark W. Finnerud.

Treatment of Syphilis of the Central Nervous System—George W. Hall.

Discussion—Lewis J. Pollock, Ralph C. Hamill, Francis J. Gerty.

FIFTH COUNCILOR DISTRICT

On December 11, a joint meeting was held of Mason, Menard, Tazewell and Logan Counties, at Mason City. There were about forty-five men in attendance, with almost the entire membership of these four counties. Other counties having representatives present were Schuyler, Fulton, McDonough, DeWitt and Sangamon. A splendid dinner was served at 6:30 by the ladies of the Presbyterian Church.

Dr. S. E. Munson, Councilor of the Fifth District, was introduced by Dr. H. O. Rogier, representing the Mason County Medical Society, and acted as toastmaster for the evening.

Dr. Charles B. Reed, President of the Illinois State Medical Society, gave an address on "Contract Practice," and Dr. Harold M. Camp, Secretary, gave an address on "Recent Trends in Medical Economics." Dr. Frank J. Jirka, Director of the State Department of Public Health, talked on "The Department of Health and the Social Securities Act." The addresses were warmly received and many questions were answered by the speakers, with interesting discussions by the members present.

This was one of the largest and most enthusiastic meetings held in the north part of the Fifth District for some time.

GREENE COUNTY

Regular meeting of the Greene County Medical Society held in Roodhouse, December 13, 1935.

After a splendid dinner at Hotel Roodhouse the meeting was called to order by President A. D. Wilson.

The regular order of business was suspended to listen to a paper on "Cancer of the Rectum," by Dr. W. T. Stickley. The Doctor gave us a very interesting and instructive paper showing us specimens and microscopic slides from some of his cases together with case histories.

The paper was freely discussed in an informal manner and was thoroughly enjoyed by us all.

After the close of the discussion the business session was resumed. Minutes of the previous meeting were read and approved. Some correspondence was disposed of and a letter of greeting from Dr. W. H. Smith was read and enjoyed by us all. The Secretary was instructed to send greetings from the Society to Dr. Smith. His letter was made a part of the records of this meeting.

The secretary was instructed to draft resolutions of respect for our late Dr. A. R. Jarman and forward same to the family. A copy of these resolutions form a part of the record of this meeting.

Report of the Secretary-Treasurer was read and approved.

Election of officers followed and resulted as follows:

President—Dr. A. K. Baldwin of Carrollton.

Vice-President—Dr. F. N. McLaren of White Hall.

Secretary-Treasurer—Dr. W. H. Garrison of White Hall.

Dr. E. E. Jouett of Carrollton was elected Censor for 2 years.

Dr. O. J. Gause of Greenfield was elected Censor for 3 years.

The application of Dr. C. A. Billings of Hillview and Dr. E. W. Thomas of Roodhouse were received and referred to board of Censors.

Meeting adjourned at 10:30 P. M.

Wm. H. Garrison, Secretary.

KANKAKEE COUNTY

The Kankakee County Medical Society at its regular meeting of December 12, 1935, elected the following officers for the year 1936: president, J. H. Gamet; vice-president, J. L. Cass; secretary-treasurer, C. A. Perrodin; state delegate, S. W. Lane; alternate state delegate, C. W. Geiger; censor, J. A. Guertin.

Dr. L. W. Hunt of the University of Chicago, Department of Medicine, addressed the Kankakee County Medical Society, January 9th, on "Scarlet Fever Immunization and Treatment."

C. A. Perrodin, Secretary.

Marriages

WILLIAM A. BORIN, Bartonville, Ill., to Miss Lulu Margaret Dustey of Peoria, Nov. 21, 1935.

AARON SAMUEL LEVEN to Miss Leah Rose, both of Chicago, Nov. 30, 1935.

JOHN F. PICK to Mme. Marguerite Grassino Farre, both of Chicago, in December, 1935.

MYRTLE FORENCE SWEIMLER, Watseka, Ill., to Mr. Louis V. Jackson of Champaign recently.

Personals

Dr. Joseph K. Narat demonstrated "Multicolored Corrosion Specimens" before the Chicago Urological Society, January 23, 1936.

Dr. Ralph H. Kuhns, instructor in Neuropsychiatry at the University of Illinois College of Medicine, has been scheduled to address various groups this winter on Psychiatric subjects under the auspices of the Educational Committee of the Illinois State Medical Society.

The Society of Illinois Bacteriologists met January 17 at Chicago Woman's Club.

Dr. Louis Rudolph has been appointed associate professor of obstetrics at Loyola University School of Medicine.

Dr. Isaac A. Abt addressed the Chicago Heart Association, January 7, on "Heart Disease in Early Life."

Dr. Arthur E. Hertzler, Halstead, Kan., discussed "Benign Diseases of the Stomach" before the Peoria City Medical Society, January 7.

Dr. Robert A. Black has been appointed a member of the board of health, succeeding Edwin O. Jordan, Ph.D., who resigned because of ill health.

Dr. Harold C. Voris, Chicago, discussed "Surgery of the Sympathetic Nervous System" before the Fulton County Medical Society in Canton, December 18.

Dr. Edgar A. Thacker has been named medical adviser and instructor in hygiene of the health service of the University of Illinois, Urbana.

Dr. Eugene F. Traut, Chicago, discussed "Etiology and Treatment of Arthritis" before the DuPage County Medical Society in Elmhurst, December 18.

Dr. Francis Park Lewis, Buffalo, discussed "The Evolution of Ophthalmology in the Past Century" at a meeting of the Chicago Ophthalmological Society, January 20.

Dr. William H. Walsh has been appointed as a special consultant to study the hospital needs in connection with the Institute of Tropical Medicine in San Juan, Puerto Rico.

Among others, Dr. Phillips Thygeson, Iowa City, addressed the Chicago Ophthalmological Society, December 16, on "Etiology of Trachoma and Inclusion Blennorrhea."

Dr. Otto H. Schwarz, St. Louis, addressed a joint meeting of the Englewood and Stock Yards branches of the Chicago Medical Society, December 3, on "Metabolism of Pregnancy."

Dr. Claude S. Beck, Cleveland, discussed "Establishment of a New Blood Supply to the Heart by Operation" and "Acute and Chronic Compression of the Heart" before the Chicago Medical Society, December 4.

Dr. Anderson C. Hilding, Duluth, Minn., discussed "Physiology of the Nose and Sinuses" before the Chicago Laryngological and Otological Society, January 6, and Dr. George S. Livingston, "Smoke Asphyxia."

Dr. Archibald L. Hoyne, Chicago, discussed "Newer Methods of Prophylaxis and Treatment in Contagious Diseases" before the Winnebago County Medical Society in Rockford, December 20.

Speakers before the Chicago Surgical Society, December 13, included Dr. Arthur Dean Bevan, on present status of appendicitis and Dr. Frederick Christopher, Evanston, perforated ulcer of Meekel's diverticulum.

The Chicago Surgical Society was addressed, January 3, among others, by Drs. Henry N. Harkins and Paul H. Harmon on "Surgical Shock as a Lethal Factor in Bile Peritonitis."

Dr. Frederick C. Irving, Boston, discussed "Three Hundred and Eight Cases of Placenta Praevia at the Boston Lying-In Hospital" before the Chicago Gynecological Society, December 20.

Dr. Maurice J. Rubel was awarded the Cross of the Legion of Honor, in recognition of his service to the French people, December 15; M. René Weiller, French consul, made the presentation.

The Chicago Pathological Society was addressed among others, December 9, by Drs. James P. Simonds on "Chronic Thrombosis of the Portal Vein," and Nathan S. Davis III, "Atherosclerosis and Resulting Pathology in 1,000 Consecutive Necropsies."

At a meeting of the Chicago Orthopaedic Society, December 6, speakers were Drs. Marcus H. Hobart, Evanston, Ill., on "Manipulative Treat-

ment of Coccygodynia," and Frederick C. Kidner, Detroit "Cavernous Angioma of the Lower Extremity."

At a meeting of the Rock River Valley Eye, Ear, Nose and Throat Society at Rockford, December 17, Dr. Robert Sonnenschein, Chicago, talked on "Functional Hearing Tests and Their Bearing on the Diagnosis and Treatment of Nonsuppurative Middle Ear Disease."

The Chicago Society of Allergy was addressed, January 20, by A. G. Wedum, Ph.D., on "Specificity of Immunological Reactions as Illustrated by Studies of Chemoproteins," and Dr. Michael Zeller, "Leukopenic Index in Allergic Individuals."

Dr. Emil Novak, associate in gynecology, Johns Hopkins University School of Medicine, Baltimore, delivered the annual Bacon lectures at the University of Illinois College of Medicine, January 8-9.

At a meeting of the Chicago Gynecological Society, January 17, speakers included Drs. William J. Dieckmann and Howard J. Holloway on "Acute Nephritis and Pregnancy" and "Cervicitis and Endocervicitis in Relation to Gynecologic Symptomatology," respectively.

Dr. Harry A. Paskind presented a paper before the Society of Medical History of Chicago, January 17, entitled "Sir Charles Bell: A Biographical Sketch," and Dr. Clarence A. Earle, one on "Dr. John Zahn, Pioneer German-American Physician."

At a meeting of the Sangamon County Medical Society in Springfield, January 2, Dr. Herbert B. Henkel discussed "Symptoms and Diagnosis of Common Urologic Conditions"; Emmet F. Pearson, "Minor and Borderline Manifestations of Allergy," and Herman H. Tuttle, present-day health problems.

Speakers before the Chicago Pediatric Society, January 21, were Drs. Abraham B. Schwartz, Milwaukee, "Rational Treatment for Abnormally Attached Frenum Labium"; William H. G. Logan, "Indications for Surgical Treatment of Cleft Palate and Cleft Lip," and Thomas L. Grisamore, D.D.S., "Primary and Major Indications for Orthodontia."

Dr. Jacob P. Greenhill, recently appointed head of the department of obstetrics of the American Hospital, has resigned because of the pressure of other duties. Dr. Greenhill was recently promoted to professor of gynecology at Loyola University School of Medicine.

Dr. Peter Bassoe was chosen president of the Institute of Medicine of Chicago at the recent annual meeting. Harold F. McCormick and Albert A. Sprague were elected to citizen fellowship, an honor conferred on laymen who have contributed materially to the welfare of the community in medicine, dentistry, nursing, public health, social service or instruction.

Dr. Walter C. Alvarez, Rochester, Minn., discussed devices that aid in diagnosis and treatment of gastro-intestinal disease before the Chicago Medical Society, December 11, and Dr. Clayton J. Lundy, "The Heart Beat Mechanism in Health and Disease" and "Uses and Abuses of the Electrocardiogram in Diagnosis of Heart Disease." At a meeting, January 8, Dr. Emil Novak, Baltimore discussed "Endocrinology and Organotherapy in Gynecology," and Dr. Andrew C. Ivy, "A Review of the Physiology of the Pituitary Gland."

Dr. Daniel H. Levinthal will talk to the Bureau County Medical Society, February 4, 1936, at Spring Valley, Ill., on "The Treatment of Poliomyelitis in the Convalescent Stage," and will show a moving picture on "Reconstruction Surgery for Residual Paralysis Following Poliomyelitis."

The Medical Round Table of Chicago elected the following officers for 1936: President, W. A. Newman Dorland; Secretary, Maximilian Kern.

Dr. Alex A. Hershfield addressed the Brainerd Woman's Club on January 21, subject "Problem Parents." This is the first of a series of programs on mental hygiene which the club is sponsoring.

Dr. Max Thorek has been invited to be guest speaker at the Tacoma Surgical Club, Tacoma, Washington, at their ninth annual meeting in April.

Dr. Carolyn MacDonald addressed the Woman's Club of Kankakee, subject "Through the Cycles of Life," January 22.

Dr. Elmer W. Hagens addressed Will-Grundy County Medical Society at Joliet, January 22.

Dr. William L. Beecher addressed the DeKalb County Medical Society on January 23, on "Allergy."

Dr. M. Herbert Barker gave a talk on "Pneu-

monia" before the Whiteside County Medical Society, January 23.

Dr. Charles M. McKenna addressed the Calhoun County Medical Society at Battle Creek, Michigan, January 14.

News Notes

—The second Board meeting of the Woman's Auxiliary to the Illinois State Medical Society was held, January 25, 1936, at the Palmer House, Chicago. The President of the Woman's Auxiliary to the American Medical Association, Mrs. Rogers N. Herbert of Nashville, Tennessee, was the guest speaker. Mrs. W. D. Chapman, State President, presided.

—The Illinois State Department of Health announces that Health Promotion Week will be observed April 26-May 1.

—According to a report from the state health department, December 18, scarlet fever was responsible for 1,500 Christmas Day quarantines throughout Illinois.

—The program committee of the Chicago Medical Society has designated the evening of April 1, "doctors' recreation night." Physicians are urged to submit samples of their hobbies for an exhibit.

—Dr. John F. Fulton, Sterling professor of physiology, Yale University School of Medicine, New Haven, will deliver the twelfth Ludvig Hektoen Lecture of the Frank Billings Foundation, January 24. His address will be entitled "Somatic and Automatic Functions of the Frontal Lobes."

—The North Shore branch of the Chicago Medical Society offered a reward January 10, for the capture and conviction of the person or persons who murdered Dr. Silber C. Peacock, January 2. Dr. Peacock was lured from his home by a telephone call to visit a sick child.

—With several cases of smallpox under quarantine, health officials of Maywood, Melrose Park, Bellwood and Forest Park are cooperating in an immunization campaign. Sixteen cases were reported in Maywood, January 9, sixteen in Bellwood and three each in Forest Park and Melrose Park. While schools are not to be closed, health officials are advising the exclusion of unvaccinated children from school for sixteen days. Some factories in Maywood have arranged for vaccination of their employees.

—Contracts have been let for new Medical and Dental research Laboratories of the University of Illinois College of Medicine, which will be erected with funds provided in a federal grant of $1,220,000, 30 per cent of which is a gift and 70 per cent of which is a loan to be repaid in annual installments. The structure will be nine stories high, with a tower 57 feet square rising fifteen stories. The architecture will be Gothic with brick exterior. The new unit will contain the departments of public health, bacteriology and pathology of the college of medicine and will provide additional research space for other departments. The college of dentistry also will be in the new building.

—Roger Adams, Ph.D., professor and head of the department of chemistry, University of Illinois, Urbana, has been awarded the Willard Gibbs Medal of the Chicago section of the American Chemical Society for 1936, for "outstanding and fundamental contributions to synthetic organic chemistry, and for conspicuous achievements as a teacher of chemistry." Among other things, Dr. Adams has synthesized chaulmoogric acid, the active principle of the oil used in the treatment of leprosy, and butyn, a local anesthetic. Dr. Adams, now 46 years of age, graduated from Harvard University in 1909, and received the degree of doctor of philosophy from his alma mater in 1912. He began teaching at Illinois in 1916, becoming professor of organic chemistry in 1919 and head of the department in 1926. In 1935, he was president of the American Chemical Society, and received the William H. Nichols Medal in 1927.

—The mortality rate from typhoid, measles, whooping cough and malaria was twice as great among the rural as among the urban population of Illinois in 1934, according to the state department of public health. These diseases gave an aggregate death rate of 14.6 for rural and 7.1 for urban population. The death rate among rural citizens for scarlet fever, diphtheria, tuberculosis and infantile diarrhea ranged from 25 to 40 per cent higher than among the city population, giving an aggregate mortality rate of 84.9 per hundred thousand for the rural population and 60.6 for urban population. Pneumonia, according to the study, was the only

infectious disease which caused a higher mortality rate among those in urban than among those in rural districts, giving a death rate, respectively of 72.8 and 65.5 per hundred thousand of population.

Deaths

WALTER GELVIN BAIN, Springfield, Ill.; Northwestern University Medical School, Chicago, 1905; a Fellow A. M. A.; past president of the Sangamon County Medical Society; member of the Society of American Bacteriologists, American Society of Clinical Pathologists and the Radiological Society of North America; past president of the Illinois State Academy of Science; was bacteriologist in charge of the laboratory of the Illinois Board of Health, 1908-1909; served during the World War; aged 59; director of the school for laboratory technicians, medical superintendent, pathologist and radiologist to St. John's Hospital, where he died, Dec. 25, 1935, of cholelithiasis and acute pancreatitis.

WILLIAM JOSEPH BUTLER, Chicago; Rush Medical College, Chicago, 1894; a Fellow A. M. A.; formerly attending physician to the Frances E. Willard Hospital and consulting physician to the Hospital of St. Anthony de Padua; aged 63; died, Nov. 7, 1935, in Gainesville, Fla., of cerebral hemorrhage.

NATHAN PORTER COLWELL, for many years Secretary of the Council on Medical Education and Hospitals of the American Medical Association, died of cerebral hemorrhage at his home in Wilmette, Ill., January 6, aged 65 years. Dr. Colwell was born in Osceola, Iowa, May 25, 1870, and received his medical degree from Rush Medical College in 1900; a Fellow A. M. A. He became associate instructor in otology at his alma mater and served at the same time as assistant dean in Rush Medical College.

In 1901 *The Journal, A.M.A.*, published its first Educational Number, which included a survey of American medical colleges, and in 1903 its first annual State Board Number. Apparently as a result of these surveys the House of Delegates of the Association was stimulated to the formation of the Council on Medical Education in 1905, and Nathan P. Colwell became its first secretary in 1906. From that time he made numerous contributions to the subject of medical education. As secretary of the Council he bore a large share of the responsibility for direct investigation and report on medical schools, for aiding the trend of discussions at the annual conferences on medical education, and for setting forth clearly the facts in relationship to medical education in the United States. He was also instrumental in organizing the Federation of State Medical Boards of the United States and drew up its first constitution, which was adopted in 1912. He aided in establishing the monthly bulletin of the federation and served as its managing editor until the time of his retirement as secretary of the Council on Medical Education and Hospitals in 1931. Each of the annual reports on medical education and on hospitals published by the Council on Medical Education and Hospitals during his tenure of office was drawn up under his personal supervision. Moreover, from 1904 to 1915 he compiled the statistics of deaths associated with Fourth of July accidents and did much in the campaign to lower this morbidity and mortality.

From 1913 to 1930 he was a collaborator of the United States Bureau of Education. During the World War his knowledge of medical education was put at the disposal of the United States Army and he served as contract surgeon in the office of the Surgeon General. He was a member of the Institute of Medicine of Chicago and of Alpha Omega Alpha.

During the twenty-five years of his work with the American Medical Association he rendered devoted service at a great sacrifice of his health and leisure. In 1931 he was retired and since that time had been living at home, concerning himself partially with the preparation of a history of medical education. He was an earnest and conscientious worker, devoted to the single purpose of raising standards in medical and hospital care. His temperament was judicial and his mind analytical. To him must be assigned a large portion of the credit for the persistent and steady advances made in medical education in this country during the past quarter century.

MATILDA EATON, Cambridge, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1896; a Fellow A. M. A.; aged 72; died, Nov. 27, 1935, of mitral insufficiency.

JOSEPH HALL, Westfield, Ill.; Medical College of Indiana, Indianapolis, 1894; member of the Illinois State Medical Society; aged 86; died, Nov. 12, 1935, of heart disease.

ROBERT WILLIAM HOCKMAN, Addis Ababa, Abyssinia, Africa; Northwestern University Medical School, Chicago, 1933; United Presbyterian missionary; formerly of Wheaton, Ill.; aged 29, was killed Dec. 13, 1935, while handling a bomb which exploded.

WILL CARLTON NORTH, Rockford, Ill.; State University of Iowa College of Medicine, Iowa City, 1928; aged 38; died, Oct. 21, 1935, of angina pectoris.

ORSON BAILEY SPENCER, Kankakee, Ill.; Western Homeopathic College, Cleveland, 1868; member of the Illinois State Medical Society; aged 90; died, Dec. 3, 1935, of cerebral hemorrhage.

FREDERICK ROBERT ZEIT, Chicago; Western Reserve University Medical Department, Cleveland, 1887; assistant in pathology and bacteriology in 1900, professor of bacteriology and clinical pathology in 1901 and 1902, from 1903 to 1913 professor of pathology and bacteriology and since 1913 professor of pathology, Northwestern University Medical School; founder of the Frederick Robert Zeit Museum of Pathology, Northwestern University; professor of pathology and bacteriology, Post-Graduate Medical School of Chicago, 1900-1919; collaborator and first assistant of Prof. Edwin Klebs, 1897-1900; member of the American Association of Pathologists and Bacteriologists; president of the Chicago Pathological Society, 1904-1905; consulting pathologist to the Wesley and Grant hospitals; aged 71; died, Dec. 5, 1935, in Coronado, Calif.

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